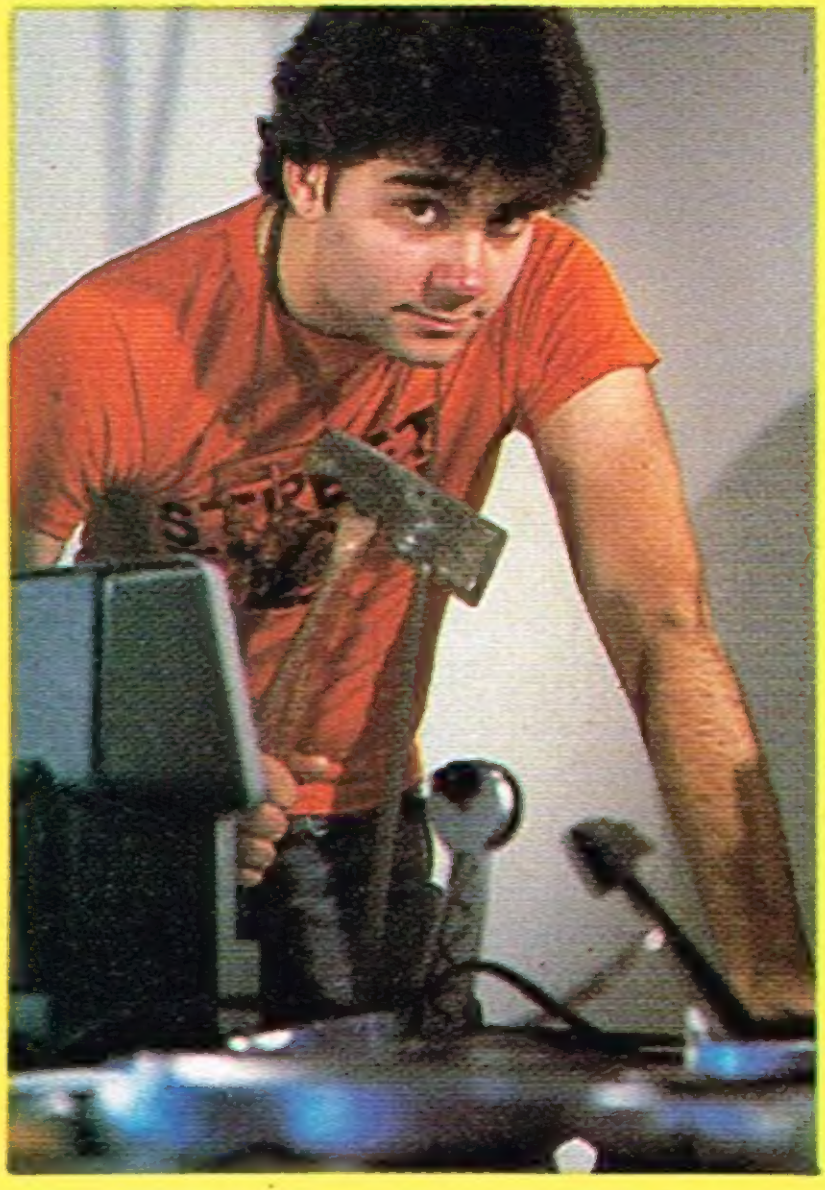


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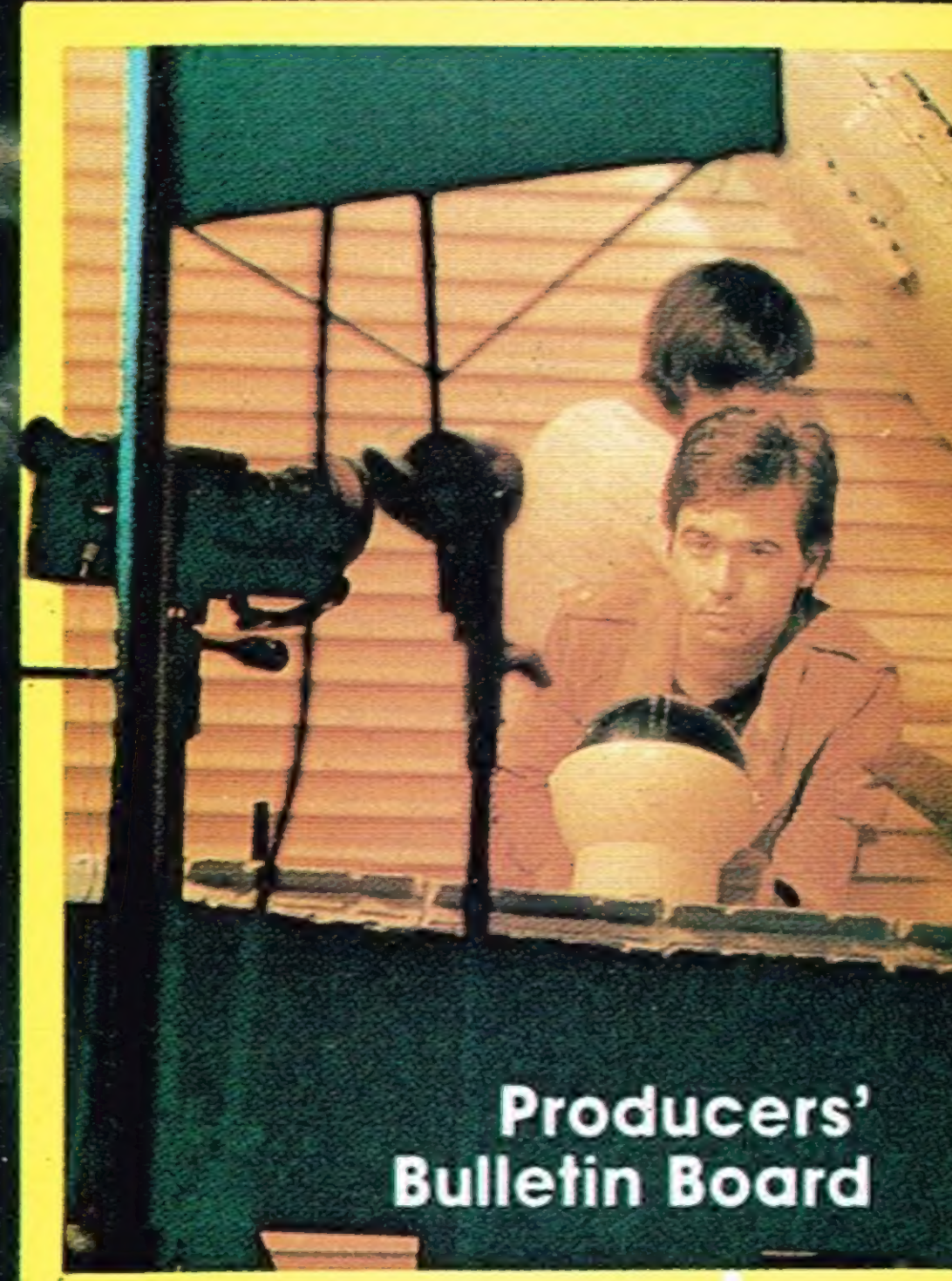
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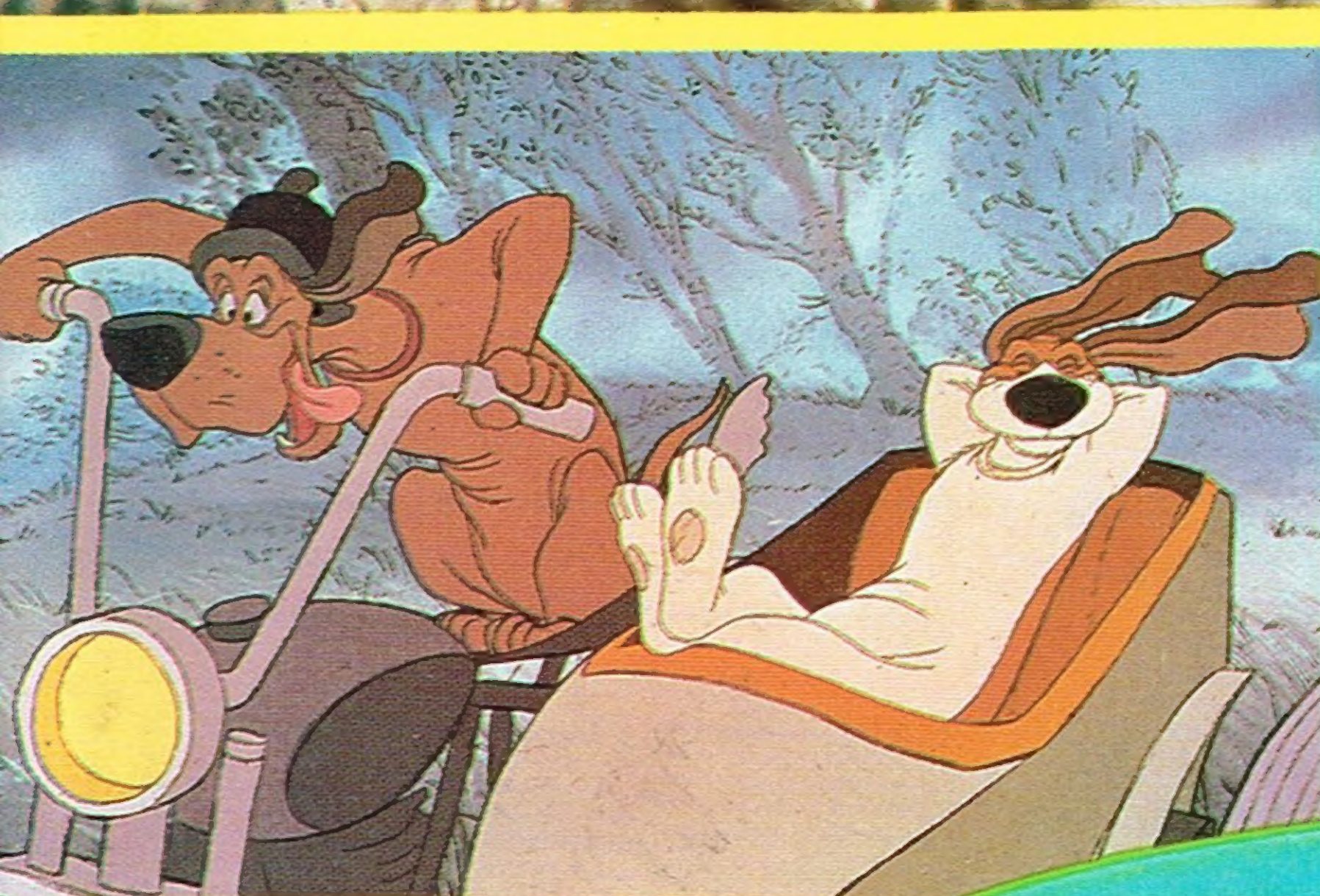
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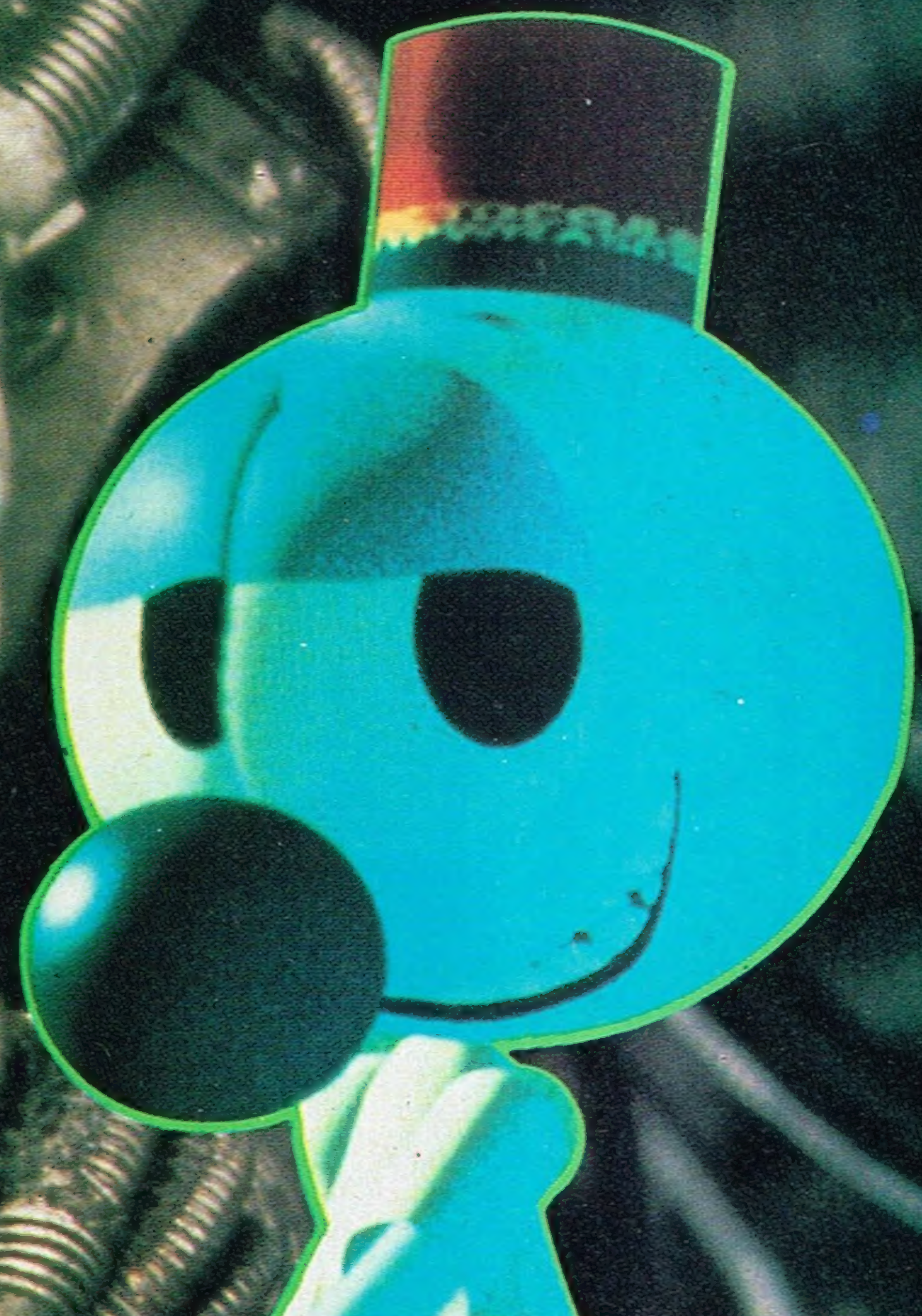
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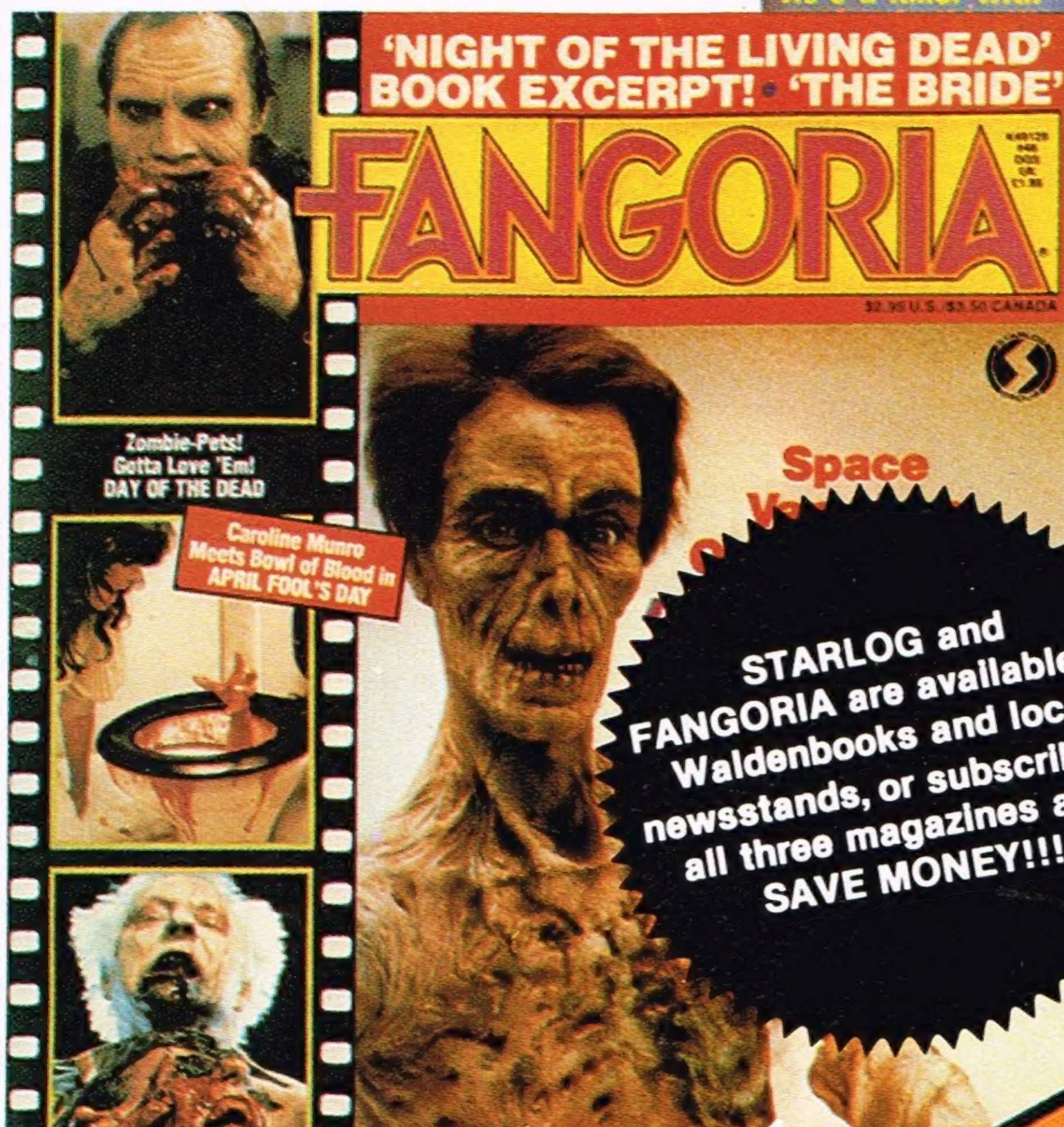
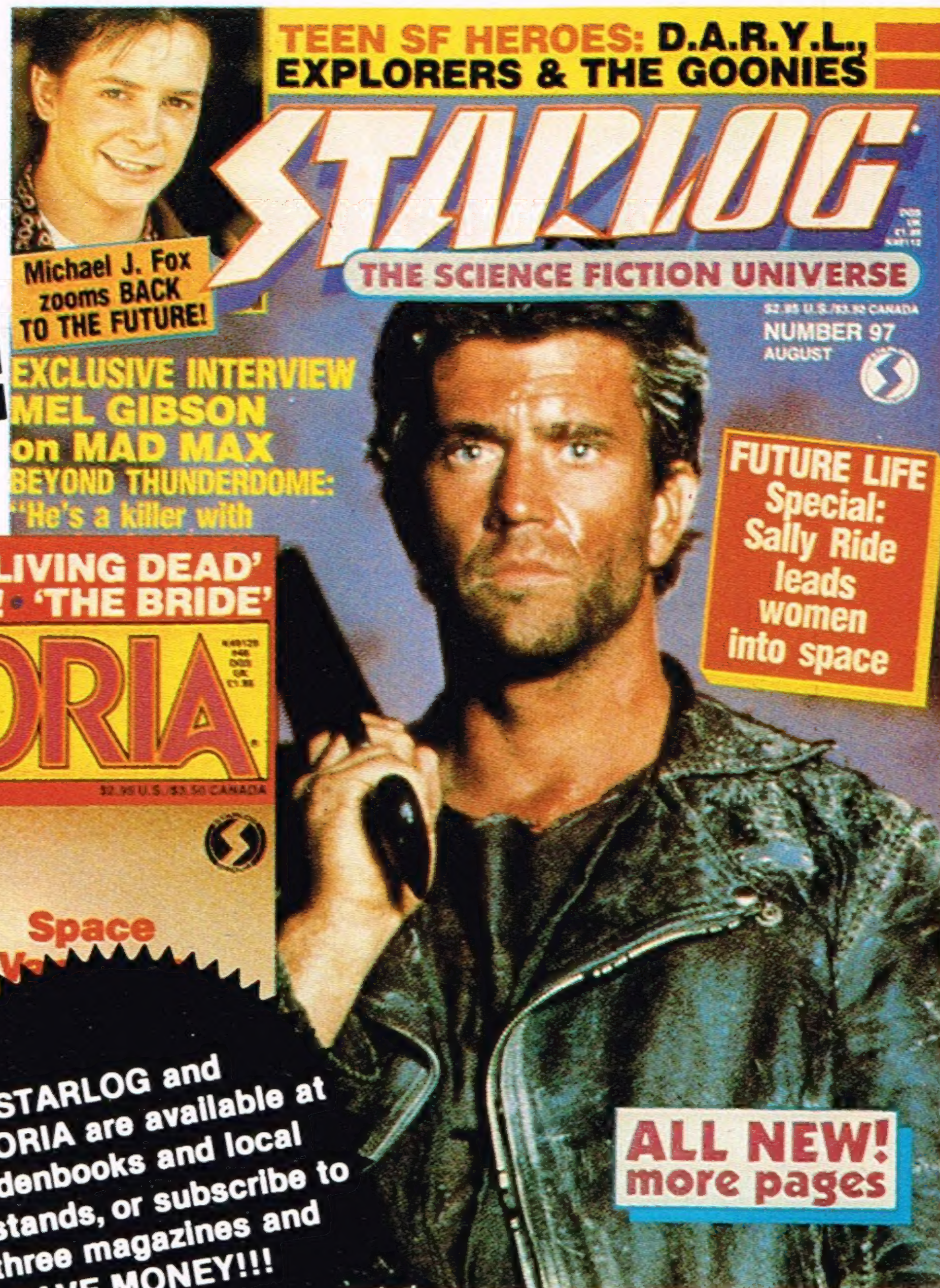
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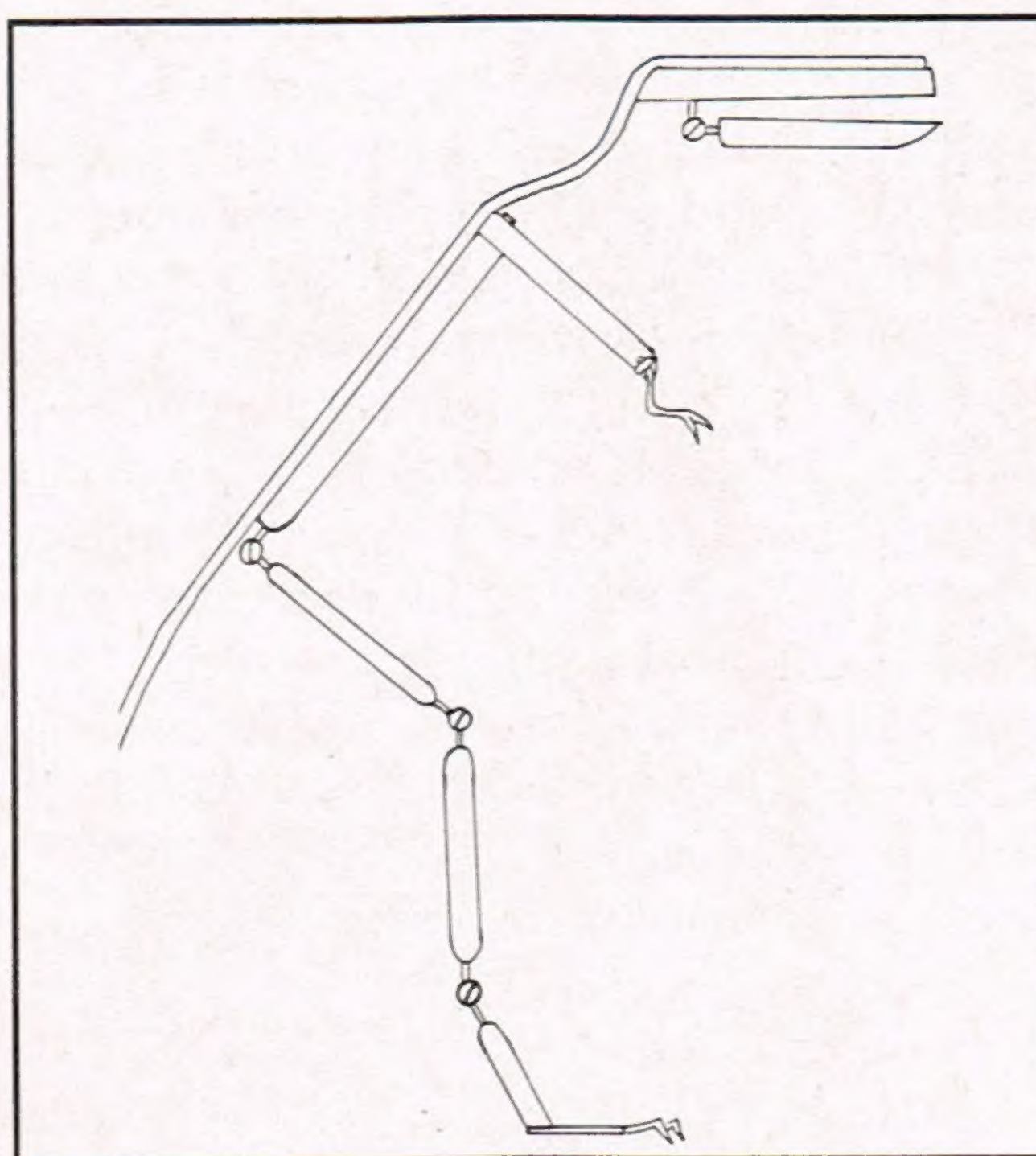
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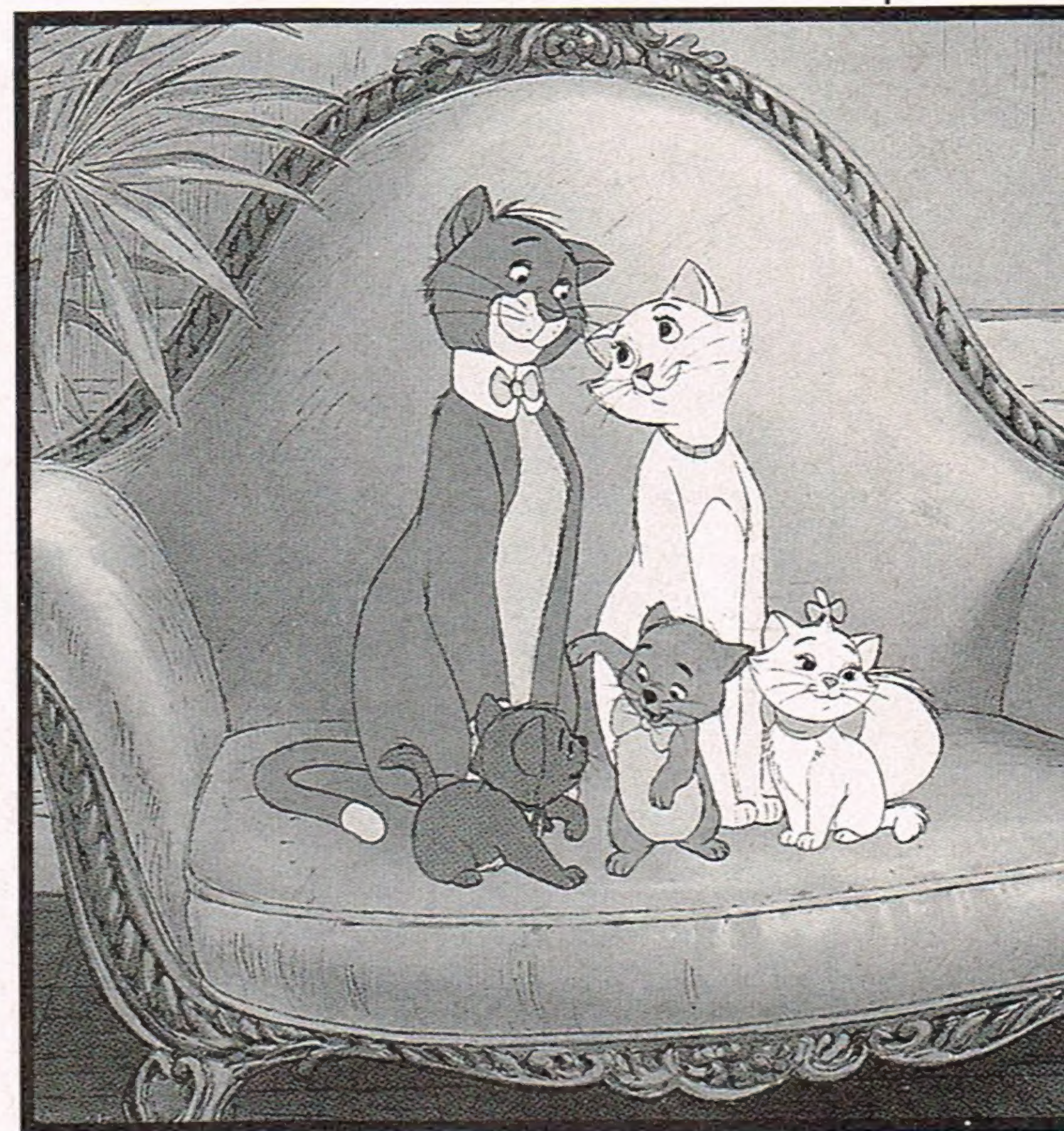
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Editor's

BENCH

Upping the Frame Rate

It was during the judging of this year's Short Film Search that I noticed more people were shooting Super-8 at 24 frames per second than at 18. I also noted that more Super-8 films had really good soundtracks and others were transferred to video for final edit. The best soundtracks and the best video transfers were made with originals shot at 24 frames per second. I suspect this will continue to be the case. The only Super-8 films which will probably remain at 18 frames per second are animated productions. Here the lower frame rate represents a 25% savings in painful frame-by-frame labor.

A similar trend is being noted in Hollywood. For years Douglas Trumbull has been advocating a higher frame rate for theatrical films. His own process, Showscan, which is seen primarily in special exhibition situations such as World Fairs and theme parks, runs at a super speed of 60 frames per second. The motion picture industry has been turning out films at 24 frames per second since the dawn of the sound era, and they have been very resistant to change.

Increasing competition from the brilliance and efficiency of the growing video medium is forcing the filmmaking community to re-think its position. Most films have a very short theatrical life before playing out their days either as home videos or on standard broadcast TV. In addition, many TV series are shot on film and transferred to video. Video, as you are probably aware, operates at 30 frames per second. Transferring film to video has always had to deal with this problem.

Recently, there has been a move to raise the frame rate for film to 30 frames per second. Panavision has already been supplying cameras with this capability to the professional world and others will follow. In addition to easing compatibility problems between the two mediums, film will benefit with brighter, more flicker-free images and increased sound fidelity. Electronic editing of film will get a big boost as well.

*** **

This issue begins with a basic introduction to the art and science of editing for those of you who are just starting out as filmmakers. There are two articles on set construction: one on miniatures and another on full size designs. Animators will appreciate Douglas Borton's economical solution to simple armature construction, while a new contributor, Joseph Grossberg, explores an easy and inexpensive horror effect. The winners of the Los Angeles Animation Festival are reviewed, and there is a survey of the latest Disney re-release, *The Aristocrats*.

Easily the most valuable section this month is The Source. John Dods has updated his list of unusual and hard to find equipment and supplies for the special effects artist and fantasy filmmaker.

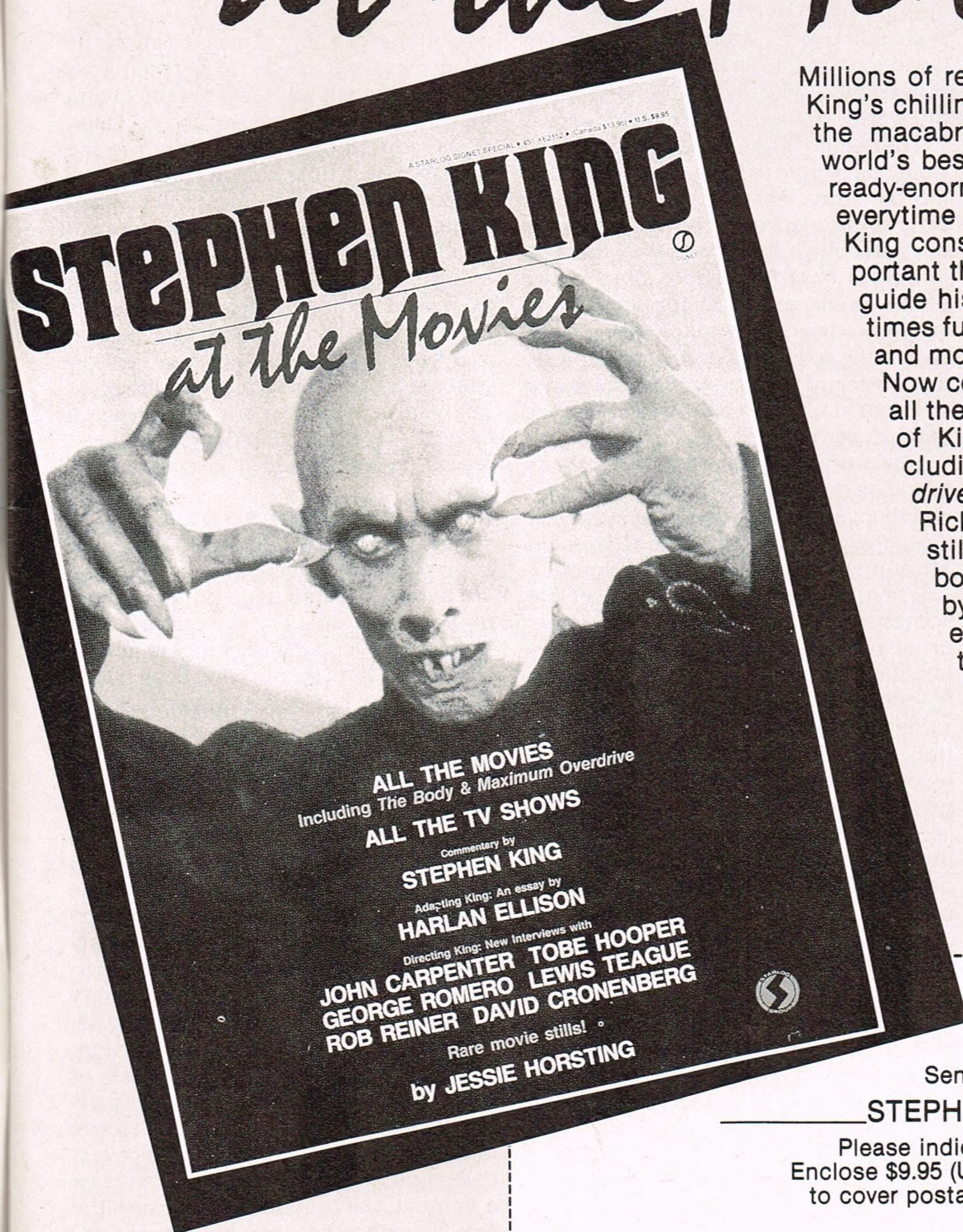
The centerpiece this month is a detailed look behind the scenes at the Disney 3-D musical short, *Captain EO*. For those of you embarking on professional careers, I suggest you keep an eye on the growing use of film in theme parks. As Audio-Animatronic show rides grow more and more expensive, more parks are turning to film, instead. Filmmakers are being asked to produce short "thrill films" which can be keyed to in-theater effects, such as moving seats, stereo sound and light effects. It appears to be a relatively new and growing industry.

—David Hutchison

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at The Movies



Millions of readers have thrilled to Stephen King's chilling novels—brilliant exercises in the macabre, which have made him the world's best-selling horror novelist. His already-enormous audience of fans swells everytime one of his books is dramatized. King considers these adaptations so important that he has started to personally guide his work onto the screen—sometimes functioning as screenwriter, actor and most recently as director.

Now comes a superb volume detailing all the film and television adaptations of King works. All the movies—including the current *Maximum Overdrive* and *The Body*.

Richly illustrated with dozens of stills and color photographs, the book also contains commentary by Stephen King himself, plus an essay by Harlan Ellison on adapting King to the screen.

There are interviews with King directors, such as John Carpenter, Tobe Hooper, George Romero, Lewis Teague, Rob Reiner and David Cronenberg, explaining each film and giving behind-the-scenes facts.

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IT'S THE CUT THAT COUNTS

Where are movies really made? Not on the sound stage, not in the writer's typewriter or on the art director's storyboards...but in the editing room—a movie lives or dies.

By ADAM LEBOWITZ

Quick! What's your favorite movie of all time? Okay, now, who directed it? Who starred in it? Perhaps you even know who wrote it. Of course, you must know who edited it. What? You don't!? For shame! Without the editor, your favorite flick would probably still be laying around in some film can in the middle of nowhere. It's the editor, who magically transforms countless miles of celluloid into the entity we call a movie. The unsung hero of Hollywood is the Editor.

Editing is the sole element, which separates film from any other form of entertainment. A novel tells a story through words. A comic book tells a story through words and pictures. A stage play tells a story through *moving* pictures. Only film tells a story through a *succession* of moving pictures and this succession is achieved through editing.

A rough definition of what film editing is might be: to tell a story by placing shots and scenes of various lengths in a specific order. If you change that order, you change the story. How much it changes, depends on how drastically you shift the order. After deciding the story of *Annie Hall* wasn't working, Woody Allen completely changed it in the editing room, and that movie went on to win the Academy Award for best picture in 1977.

This is not to say that editing's main function is to make a bad film into a good one. If your original material is awful, the

best cutting in the world won't save it. On the other hand, even if you start with the best script, acting and cinematography in the world, a poor editor can ruin it.

The main reason we edit is to move from one picture to the next, thereby telling the story. Assume we have a short script of four scenes: two of which take place in John's apartment, the other two in John's basement. According to the script, scene one is in the apartment, scene two in the basement, scene three back in the apartment, and we conclude in the basement. Now, pretend we have only one area in which to build these sets: the garage, perhaps.

Obviously, the only practical approach would be to first build the apartment set and shoot scenes one and three; then tear down the apartment, build the basement set and shoot scenes two and four.

When editing, you'd cut out all the scenes and then put them in their proper order (unless you enjoy unnecessary hard labor, in which I suggest you build, tear-down, and re-build sets all day). The same principle goes for filming on location. You film all the scenes that take place at the first location at one time, then go on to location two. You shoot *out-of-sequence*, putting scenes back in sequence in the editing room. This is perhaps the most fundamental reason for editing.

Another is the case of the multi-take. Usually there will be several takes

(shootings) of a shot. This is to allow the talent (actors/actresses) to say their lines several different ways, eventually giving the director a wider range of choice. Later, in the editing room, he will choose the take that best suits his interpretation of the scene. Many times, there will be additional takes simply due to problems such as a forgotten or flubbed line, a camera being hit or other such 'bloopers.' An average film will shoot at least three times more footage than is actually used (known as a 3:1 *shooting ratio*), which may begin to give you an idea of how big the editor's job really is. Just cutting out the unwanted takes is a huge job. Other, more aesthetic reasons for editing will be discussed later.

An Editor's Tools

The one piece of equipment you must actually go out and buy (yes, reader, you are hereby ordered to go out and spend money) is a splicer. No matter what anyone tells you, when it comes to joining two ends of film, scissors and Scotch tape just won't cut it. A splicer's main function is to hold the film firmly, cut it at the desired point, and provide a surface to apply the splicing material. A splicer is needed because the film *must* have straight, exact cuts. Otherwise, the ends won't match, which will cause all kinds of trouble. A splicer will always cut the film in the same area, assuring you that sprocket holes on a splice will stay evenly spaced. Unevenly cut sprockets are what cause projectors to skip, flutter, tear, and eat your film. I think projectors enjoy doing this, so take my advice and don't give them the satisfaction.

There are basically two types of splicers: tape and cement. Tape splicing is exactly what it sounds like: a small piece of special, transparent tape which covers both ends of film on both sides. To create a cement splice, you must scrape the emulsion (the photographic side of film) off one frame, apply a liquid glue solution and join the two ends. Which is better?

Both splices are easy to make. Some people believe cement to be more durable than tape, but a good tape splice is more than strong enough to hold the film together. I would recommend tape splicing over cement, because when you cement you lose a frame of film forever. With tape, if you suddenly change your mind about a cut, you can just peel off.

Most beginners learn more about the art of filmmaking, while editing rather than while shooting their film.



One frame may not seem like a big deal, but trust me—I have thanked the God of Tape Splicing many times because I needed that frame. Tape splicers also generally cost less! You can find a cheap one in almost any decent photo store, along with the Band-Aid like tapes that go with them.

These little gizmos will get the job done, but that's about it. They do not always cut on the frame line and the tape usually covers four frames—two factors which make splices more noticeable when projected. They can be annoying as hell.

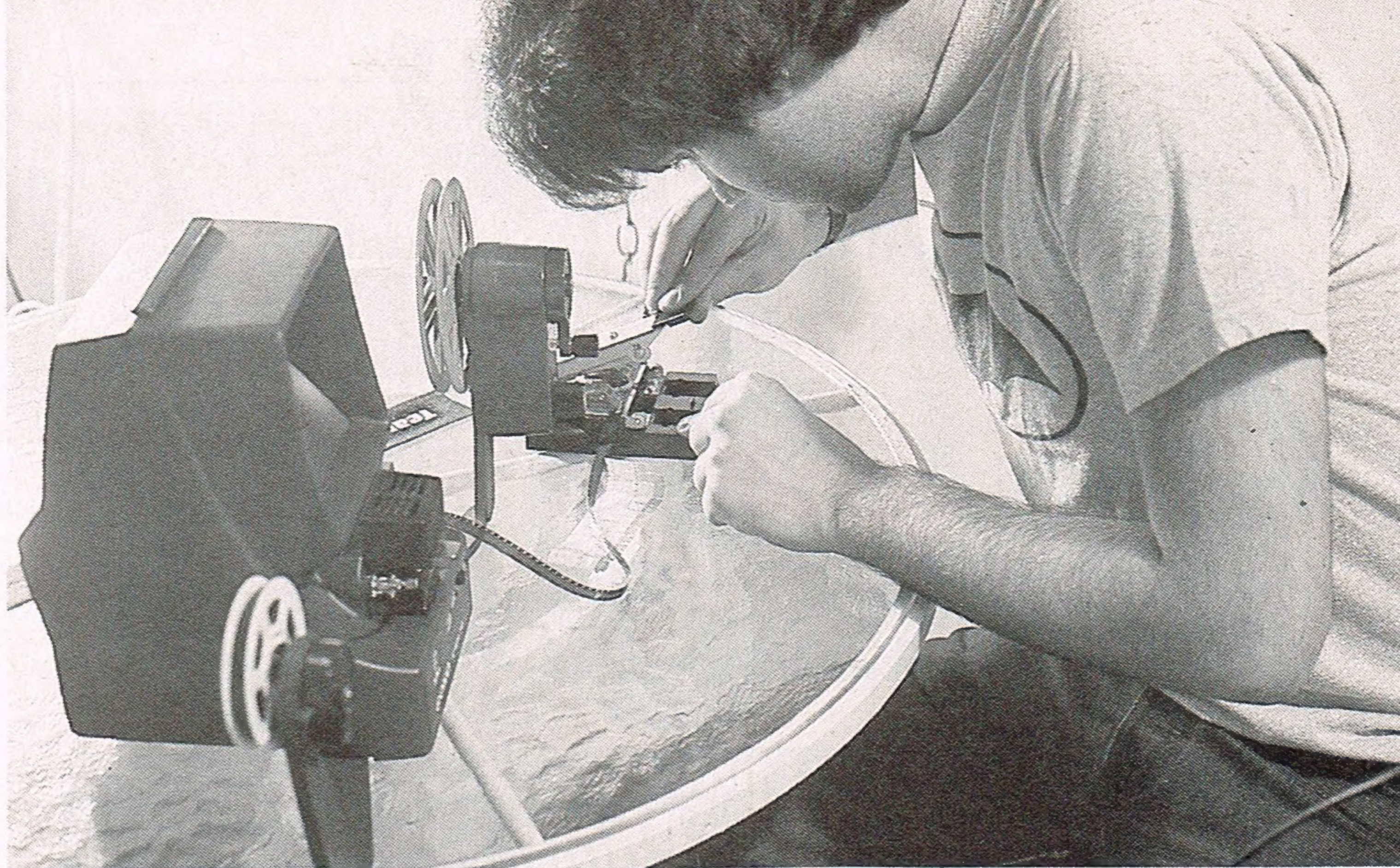
For splicing in style, I highly recommend the Wurker tape splicer. I have never found a machine more precise and easy to use in my entire Super-8 career. Not only does the Wurker cut exactly on the frame line and utilize clever tapes, which only cover two frames, it allows you to tape both sides of film, almost without lifting a finger.

In an ordinary splicer, after taping the first side you must pull the film off the sprocket holders, flip it over, then tape the second side. Anyone who has done this knows what a pain it can be. The Wurker includes two ingenious little built-in clamps which hold the film onto the splicer. After taping the first side you just flip over the hinged surface and presto! Wrap the tape around the other side (for editing sound film, the Wurker tapes also leave both sound stripes intact). At around fifty bucks, no Super-8 editor should be without one. Now you need something to see the film with.

A projector is not really a good editing tool. First of all, running your film through the projector after every cut is not only time consuming (to see one cut you'd have to run the entire film), but it puts a lot of wear and tear on the splices, not to mention the horrendous shape your film will be in by the time you're through cutting.

If you really insist on shoe-string budget editing, a magnifying glass and a light table will do. Any glass or plastic surface can double as a light table: just put a light under it! For a magnifier, I would suggest an Agfa Lupe, which is designed for film work. Any photo store should carry it. This method works surprisingly well for seeing the image, but has one major drawback—no means for seeing your edit in motion, which is really the only way to tell if it works. After a few cuts you can run it through the projector and see, but again arise the same problems as before: wear, tear and time. If possible, I strongly suggest you purchase a viewer.

An editing viewer is a simple machine. Like a projector, it has a feed and take-up reel, a bulb and a simple threading mechanism. Unlike a projector, it allows you to see the image on a small screen (usually from three to six inches), is hand-cranked forward and back, allows you instant access to the film and produces very little wear. Of course, the major convenience of a viewer is that it allows you to



The technique (and art) of editing is fundamental to the movie making process.

see your cut right after you make it, as many times as you wish, simply by throwing it into the viewer and cranking forwards or backwards. If you want to make a cut, pull the film right back out and lay it on the splicer. As can be expected, there are many types of viewers at a wide range of prices.

A simple viewer will do all of the above and do it very satisfactorily. Some may even accommodate both Super and regular 8. Almost all should have a lever that allows you to put a small mark on the frame as a reference guide. These editors can be found for about \$40—probably cheaper, if you shop around.

Some editors provide other 'luxuries.' One nice feature to look for is called "flicker free." Editors work like projectors. They open and close a gate in between frames, showing you only the frame and producing an illusion of motion. Since editors run as fast as you turn the crank, you'll end up running them slower than 24 frames per second (FPS) to get a better look at the action. In doing so, the black bar between frames starts to become annoying. A 'flicker free' viewer utilizes a prism-like wheel, which dissolves one frame into the next, eliminating the black bar and producing a pleasant image.

Another editorial frill is the motorized viewer. This editor uses a motor to crank the film for you. Since turning by hand is not as precise, this is helpful for watching at a somewhat constant speed. Unfortunately, many of these motors do not run at exactly 24 FPS and are only variable speed, meaning the further you turn the dial, the faster it goes. I hardly ever use the motor on mine, and found that by watching the action (and with a little practice), approximating 24 FPS by hand wasn't too hard. You can definitely get close enough to tell whether or not you like your cut. So, at least for me, the motor turns out to be usually erroneous.

The last item to consider on the list of

editorial gadgetry is the sound editor. These, of course, play sound film and will run at constant speed. Some models even record! Personally, I believe the sound editor is something to stay away from. They are very expensive—around \$300 and up. My recommendation for a viewer would be a silent, flicker-free, motorized (it may come in handy) model. The name to go with would be Goko, who simply make the best Super-8 editors. Their version of this is the NF 4004 and sells for around 100 dollars. This (and other, cheaper Goko editors) have a built-in jack, which allows you to add a sound attachment at a later date, so again, a sound editor is unnecessary. Goko editors also have a wide range of accessories, from frame counters to film cleaners (other brands may have comparable products but I'd stick with Goko).

Sound: A Living Hell

Editing sound film is like being a security guard on *Star Trek*—you just can't win and I wouldn't recommend you do it. If you're a masochist (like the person who enjoys tearing down and re-building sets rather than shoot out of sequence), then go ahead. You'll probably enjoy it more than anything. For the rest of you who are, of course, sane, let me explain why.

On a projector, the sound head and picture gate cannot be in the same place. First of all, if they were, the sound head would probably block the bulb and you wouldn't see anything. More important (as explained before), the pictures are projected in a stop-start-stop-start manner. This is called intermittent motion.

To play back any kind of sound, the tape must run along the sound head at a constant speed (fluid motion). Therefore, the sound and picture mechanisms must be spaced apart, giving the projector room to convert the film's motion from intermittent to fluid. The space between the two is 18 frames. This is the key to why sound editing is a living hell: sound on

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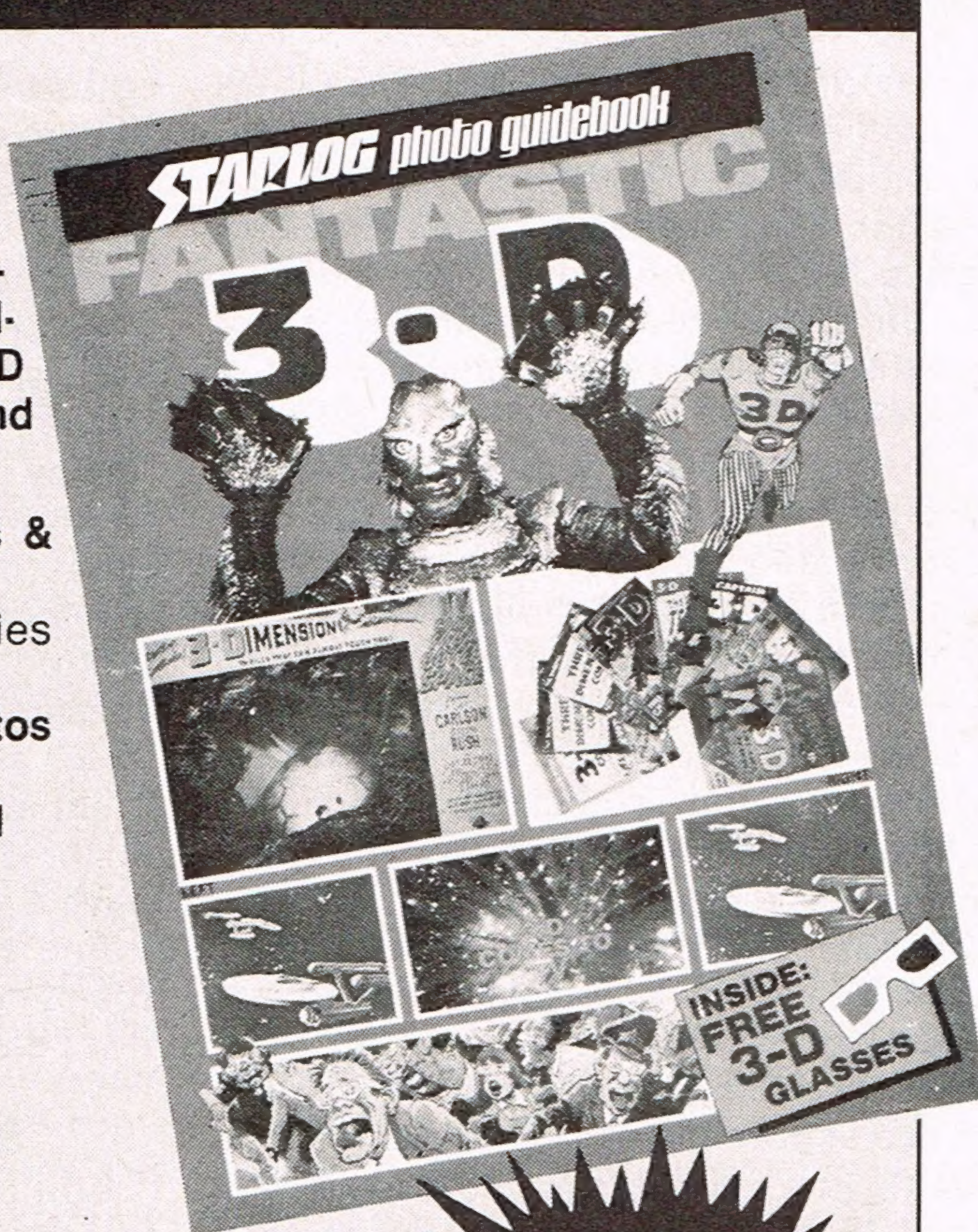
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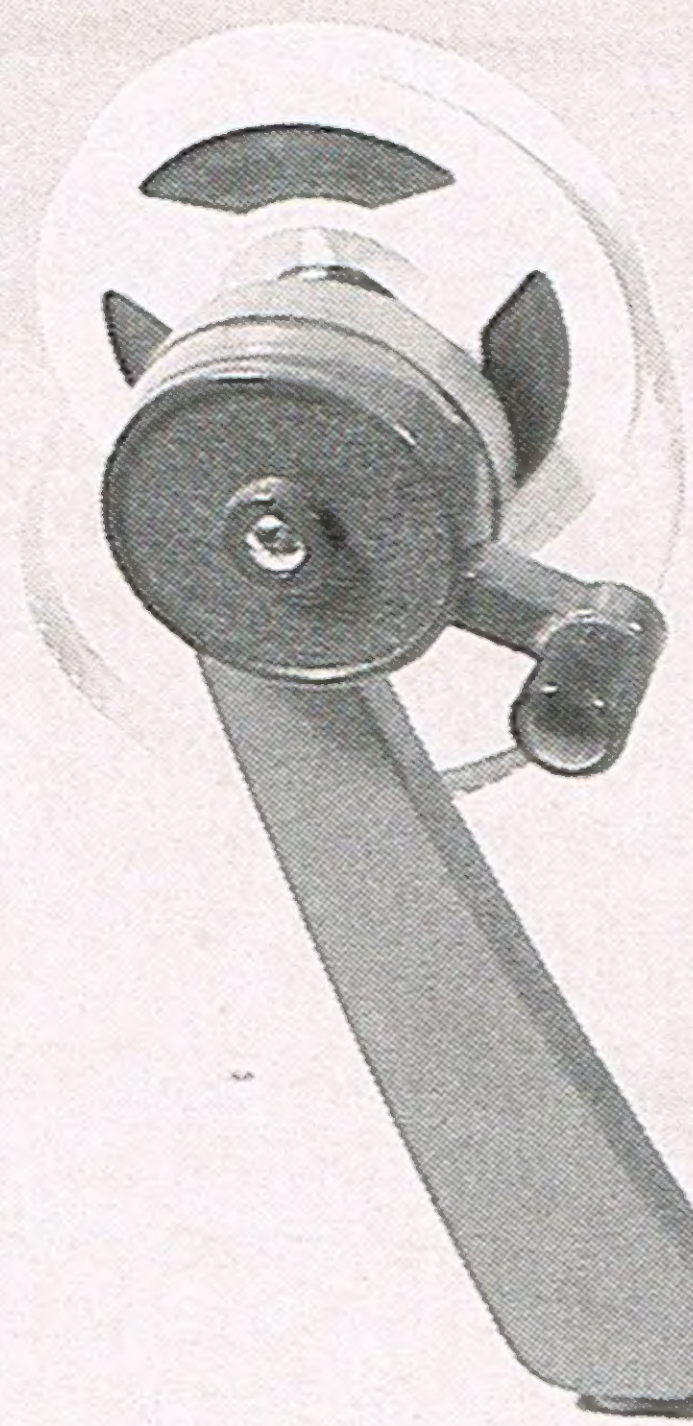
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Super-8 film is 18 frames ahead of the picture. If you were to cut a sound film looking only at picture, the sound for the first and last second of an edited shot would be destroyed. Your movie would look and sound like a drug addict's nightmare!

Unfortunately, I'm sure there are a few maniacs out there who are saying, "Yeah, but there *must* be a way." To answer you would-be Kamikazies: yes, there is a way. In fact, there are several. One of them is unacceptable, one of them is unattractive, and the last is very expensive.

The 18 frame syndrome is only a problem where synchronized sound is involved: just about anything but music—dialogue, sound effects, etc. This being the case, if you were to leave one second of silence before and after every edit in the film, your problem would be solved. This also means just about every shot (since a proper film is all edited) would have to be *at least* three seconds long. This is, of course, unacceptable. Anybody who would do this just to have sync sound should hang up their camera.

The second and only really viable alternative would be to shoot your film silently and dub in the sound later. The process goes something like this: After your film is shot and edited, you send it out and ask to have a sound stripe put on. Now you can run it through a sound projector or (very expensive) sound editor and have all your actors lip-sync their lines into a microphone. This is a long, arduous process and usually sounds like what it is: dubbed. As I said, this is unattractive.

The last process is the only way I know of to shoot Super-8 sound film and keep the sound. After shooting, have all the

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film transferred to video tape and edit it on video. This has two disadvantages. Since the cutting would be done on video, you would never have an actual print of your film to project. The larger problem is that film to video transferring and editing is expensive.

I know all this sounds very depressing, but that's the way it is. If you know a way to edit Super-8 sound that I haven't mentioned (and it is very possible) write to me in care of CINEMAGIC and I'll be sure to let the other readers know about it. There may still be hope!

The First Cut

So you want to start editing, but don't want to have to go out and make a whole film to do it. I've found a good way to begin is with all those little film cans you've had lying around since you first touched that camera. Maybe you can even convince Dad that you can breathe new life into those miles of home movies. Go and cut that diaper changing scene from 5 minutes to 30 seconds. Make a veritable music video out of sister's first birthday. Cut all of the out-of-focus, shaky scenes in your first "Spaceships On Strings From Mars" epic. You'll find it makes good practice in learning how to use the equipment. Who knows? You may even discover some of those boring bombs are now super sagas!

Now you're ready and rarin' to go. You've got the script of a lifetime and you've learned the basics of editing. Now that you realize what creative freedom and power it gives you, you're ready to shoot your first masterpiece as a real filmmaker. "But," you ask, "I've never made a movie

with the intention of editing it. Is there anything I should keep in mind while filming? Any helpful hints? Rules of thumb? Tricks of the trade? Points of "Okay, Okay. I get the picture." The answer? Yes! Plenty!

Coverage

Read that word again. One more time. Savor it. Now engrave it in your forehead because it's the most important word in the filming/editing dictionary. What is coverage? Making sure you've got all the footage you need for a successful edit and, ultimately, a successful film.

The trap many people (even pros) fall into is that of the 'lingering Master Shot.' There are basically three kinds of shots: Long shot (LS), Medium shot (MS), and Close up (CU). The master shot is usually a wide, stationary LS, which captures all the action in a scene. Just about every home movie (and probably all of your early films) are one big master shot with the occasional (cringe) zoom thrown in. Of course, we no longer want to do this because, simply, it's boring. After we do the master shot, we want to go in, repeat the action, and get our *coverage* of the scene. Let's take a simple example:

INTERIOR JOHN'S HOUSE

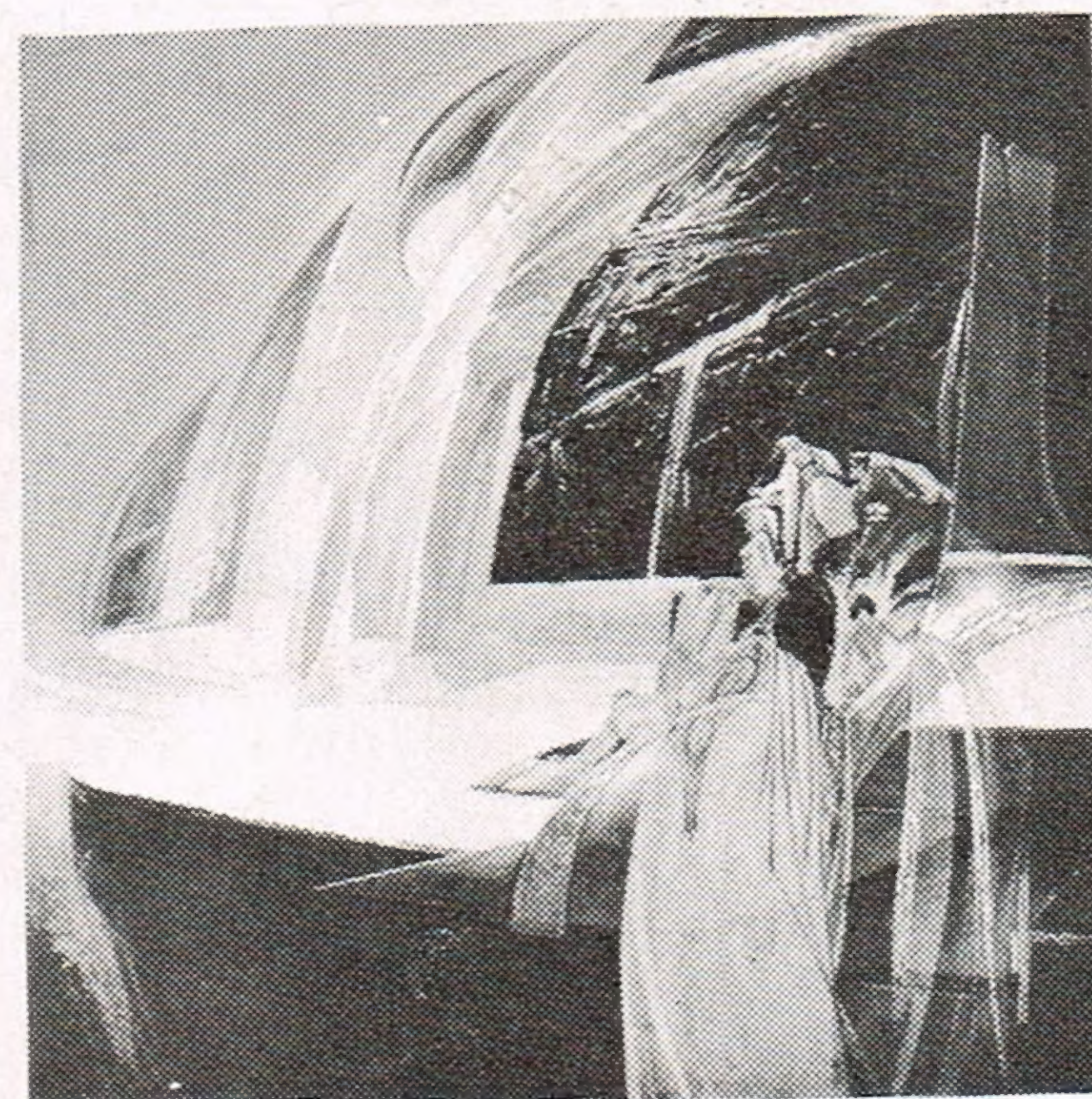
John walks into the living room to find his sister, Lisa, reading the newest issue of CINEMAGIC.

JOHN

Hi, Lisa.

LISA

Hi, John.

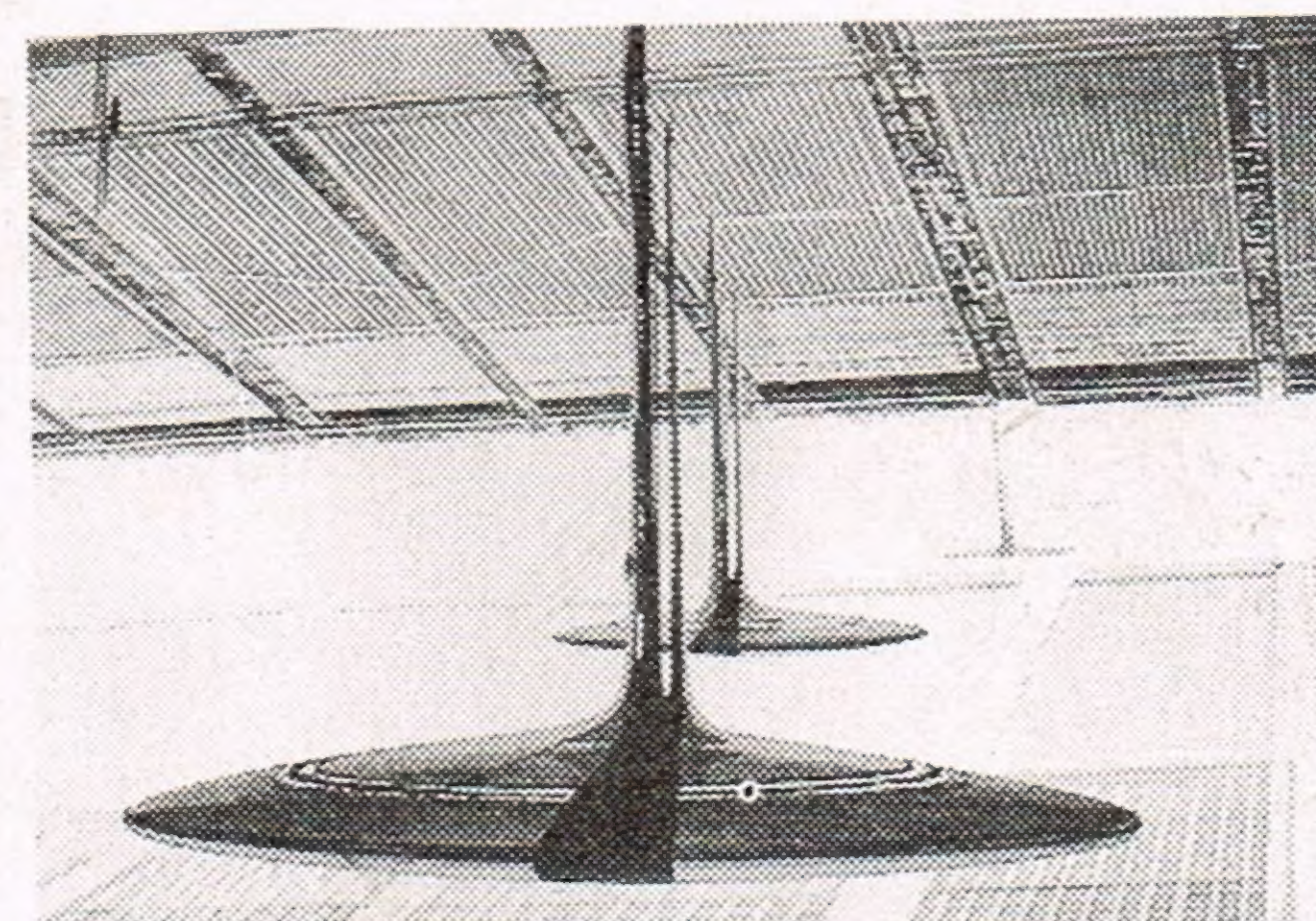


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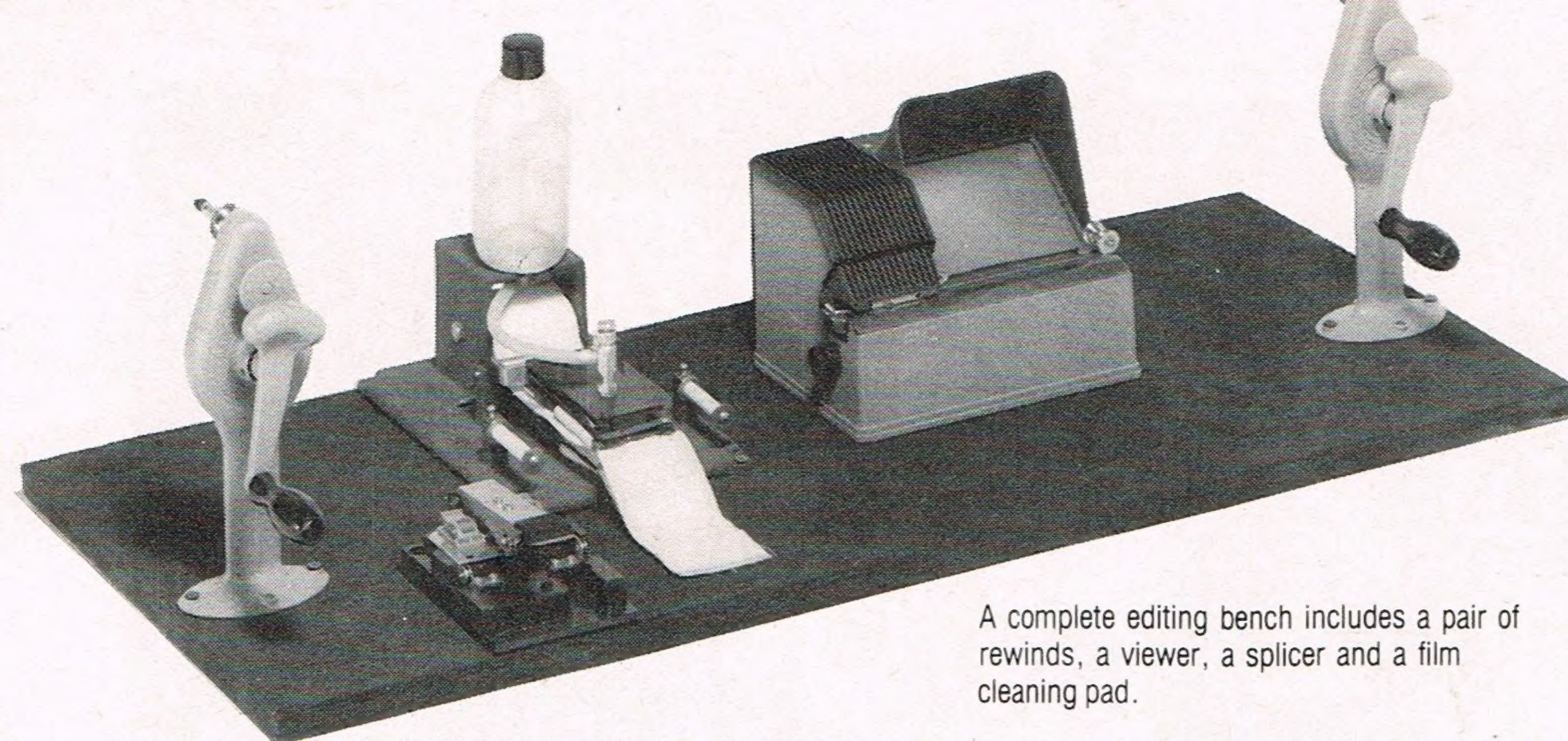
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A complete editing bench includes a pair of rewinds, a viewer, a splicer and a film cleaning pad.

JOHN
Whatcha got there, sis?

LISA
The newest issue of CINEMAGIC.
Look—It has a feature on editing!

John goes over and takes a look. He flips through the magazine.

JOHN
Wow! This is great. I always did want to learn how to edit.

Suddenly, we hear a nuclear explosion outside.

LISA
Uh, oh! Looks like we better learn quickly.

John and Lisa look at the off-camera explosion in horror.

After reading our script, we should prepare a *shot list* of everything we're going to need to cover in this scene. It might look something like this:

- Master shot
- MS of John ("Hi, Lisa")
- MS of Lisa ("Hi, John")
- CU of John ("Whatcha got...")
- CU of Lisa ("The newest issue...")
- MS of John flipping through CINEMAGIC
- CU of CINEMAGIC (A shot like this is called a *cutaway*)
- CU of John ("Wow...")



The one absolutely essential tool is a splicer.

Reaction shot of John
Reaction shot of Lisa

This may seem like a lot, but really isn't since it would be shot out of sequence (remember?). First, we get the master shot, then all of John's MS and CU, and then Lisa's. Next we get the 2-shot (A 2-shot is usually a medium or over-the-shoulder shot) and finally the two reaction shots. This way you give yourself enough coverage so that if you decide to change a shot while editing, you'll have the footage on hand. This brings us back to the 3:1 shooting ratio. This scene may last 30 seconds, but in giving yourself proper coverage you'll probably shoot one-and-a-half to two minutes of film. Remember: you'd rather shoot more than less. There's nothing worse than having a sudden flash of genius in the editing room, only to discover you don't have the shot to carry out your idea. A common rule would be *shoot everything from every angle*. Do this and you should be fine. It takes time, but it's worth it.

Continuity

I'm sure you've seen this credit in many a movie and always wondered what the hell a continuity person does. It may surprise you to find out that they make sure things are *continuous*. What things? You now know that when you're shooting a scene, it must be re-enacted several times in order to give yourself proper coverage. You should also understand that, logically, it must be done *exactly* the same way each time: word for word, action for action. This isn't as easy as it sounds, since the time between your first and last take could easily be several hours or even *days*.

In our little script, let's say that when John walks in he puts down a schoolbag. You do the master shot. Then you decide to do a MS of John walking in. When he walks in again, he must put that schoolbag down in exactly the same place in exactly the same way. If he doesn't, when you cut from the master to the MS you may suddenly discover John's schoolbag has moved two feet to the left! Audiences notice this.

How many times have you seen a film or TV show where suddenly someone's drink goes from full to empty in one cut.

Somebody forgot to tell the talent not to drink! Or a candle goes from top to bottom in a flash. No one put them out in between takes! Or, even worse, someone's clothes may change, or a bruise on a face shifts from left to right. Keeping tabs on these things is the job of the continuity person. Usually, they have a Polaroid camera handy to take photos of the sets and talent. When the next take is done, continuity can easily be checked by looking at the pictures. Poor continuity on the set, becomes the editor's nightmare later. Proper coverage won't help, if the *shots don't match*. Make sure they do.

The Final Cut

Now you're in the proverbial editing room. You've finished shooting. All the shots match and you have plenty of coverage. It's time to stop being technical and start getting *creative*, because editing is *not* a technical job. It's not just getting from one scene to the next via LS, MS, and CU. If you decide to make a cut, you have to decide *why* you're going to make it. Does this scene call for a CU? Maybe not.

For example, let's say you have a lonely character in his apartment. You may decide, to enhance his feeling of loneliness, on using only LS. You would also want to avoid fast cutting in this scene because that can imply excitement and you may not want to do that. On the other hand, for your big car chase scene, you'll probably want to cut back and forth at a dizzying rate from good guys to bad guys using LS, MS, and CU! If you were to use just the master on this, it would have the feeling of an exceptionally *dull* car chase. What you want a scene to feel like is up to you.

Try cutting it several different ways. You may want to have a copy made of all your footage and edit with that (called a workprint) to avoid scratching up and tearing your original footage. After you are satisfied with your edited workprint, you go back and cut your original footage, matching it to your workprint.

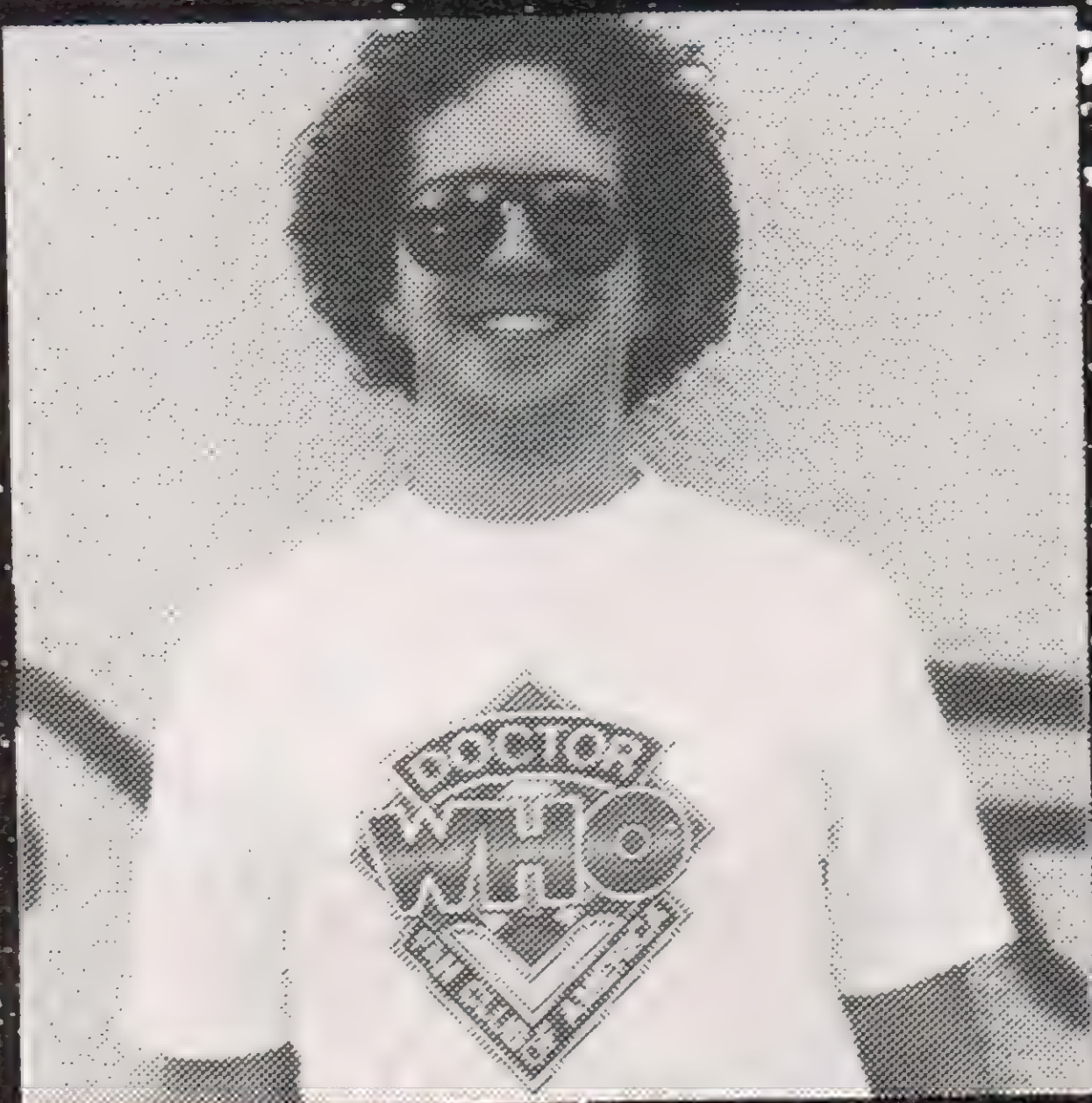
The most important thing you want to do is give your film a sense of *pacing*. The problem with many beginners is they cut their entire film uniformly, going from LS to MS to CU the whole way through. You should try and avoid monotonous editing; this can be as boring as one long master shot. Try and cut a little differently through the film (when it's called for) and give it a pace. Scenes should flow into each other and back-to-back scenes shouldn't have drastic differences in style (again, unless it's called for).

After you've completed a rough cut of your film, project it. What doesn't work will stick out like a sore thumb and what does will make you jump for joy. Take notes. Experiment. And *don't* be afraid to leave things on the cutting room floor. It may be torture, but if it doesn't fit, *it doesn't fit*. Now go...and cut your heart out!

CM

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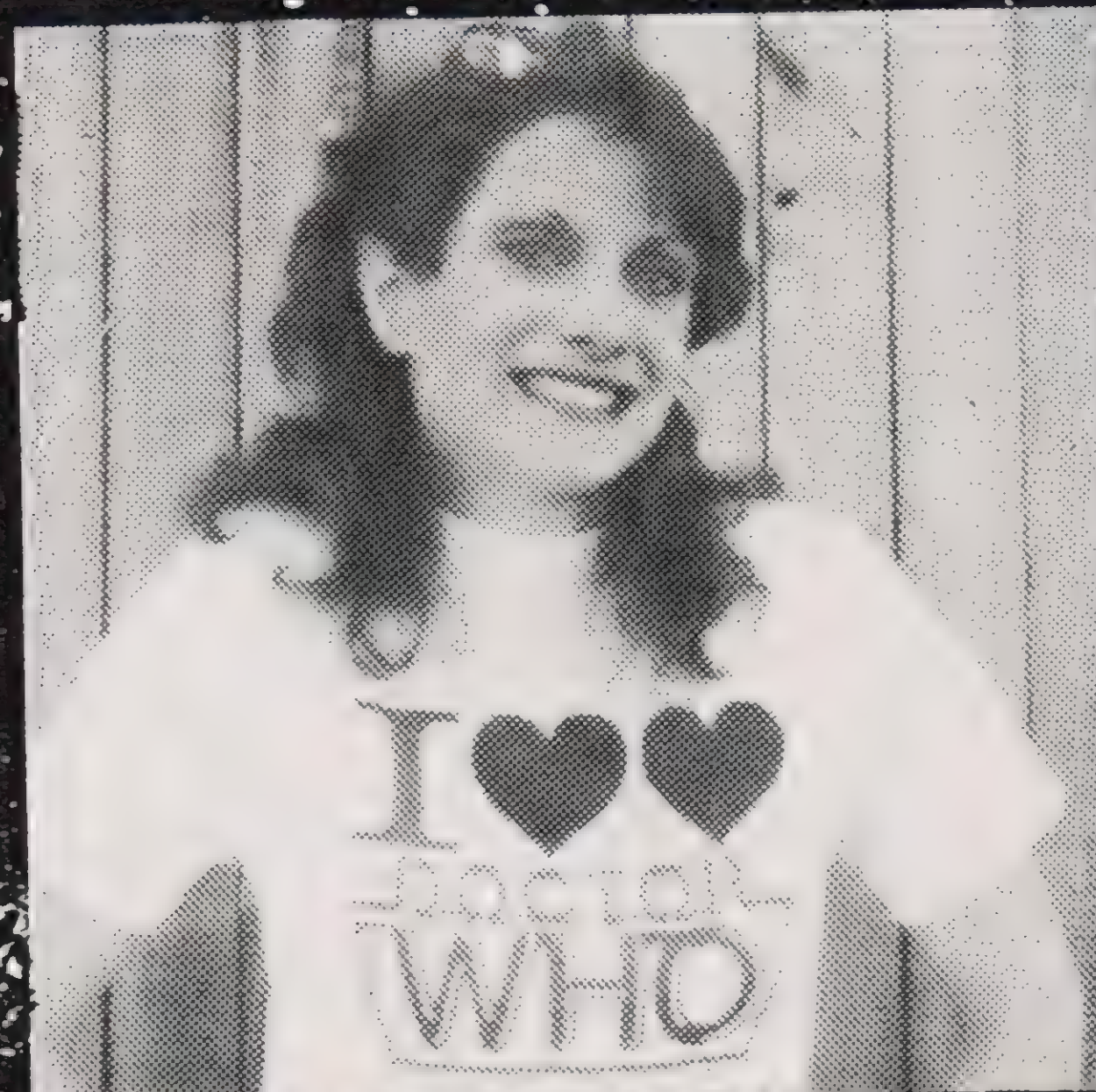
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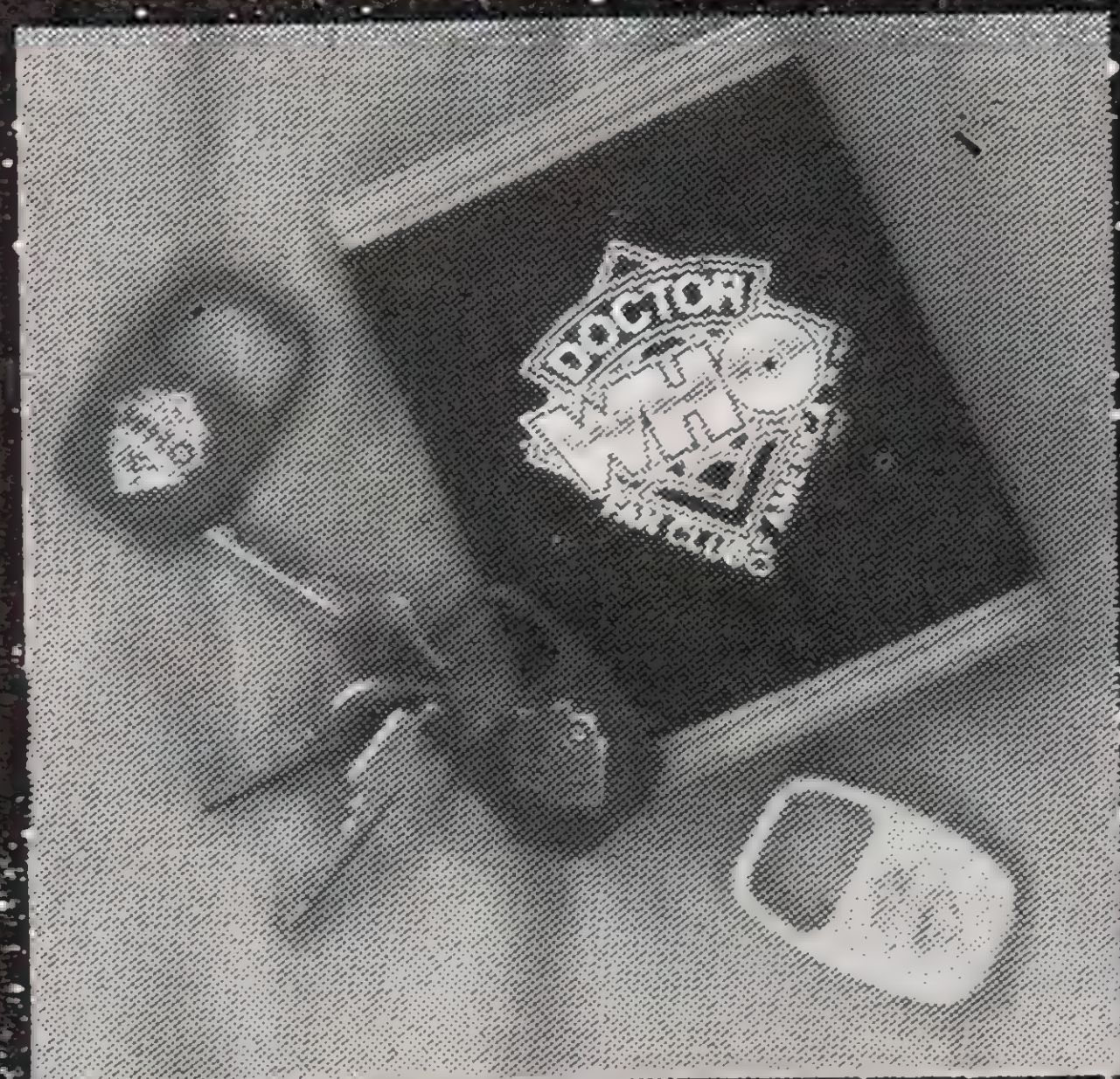
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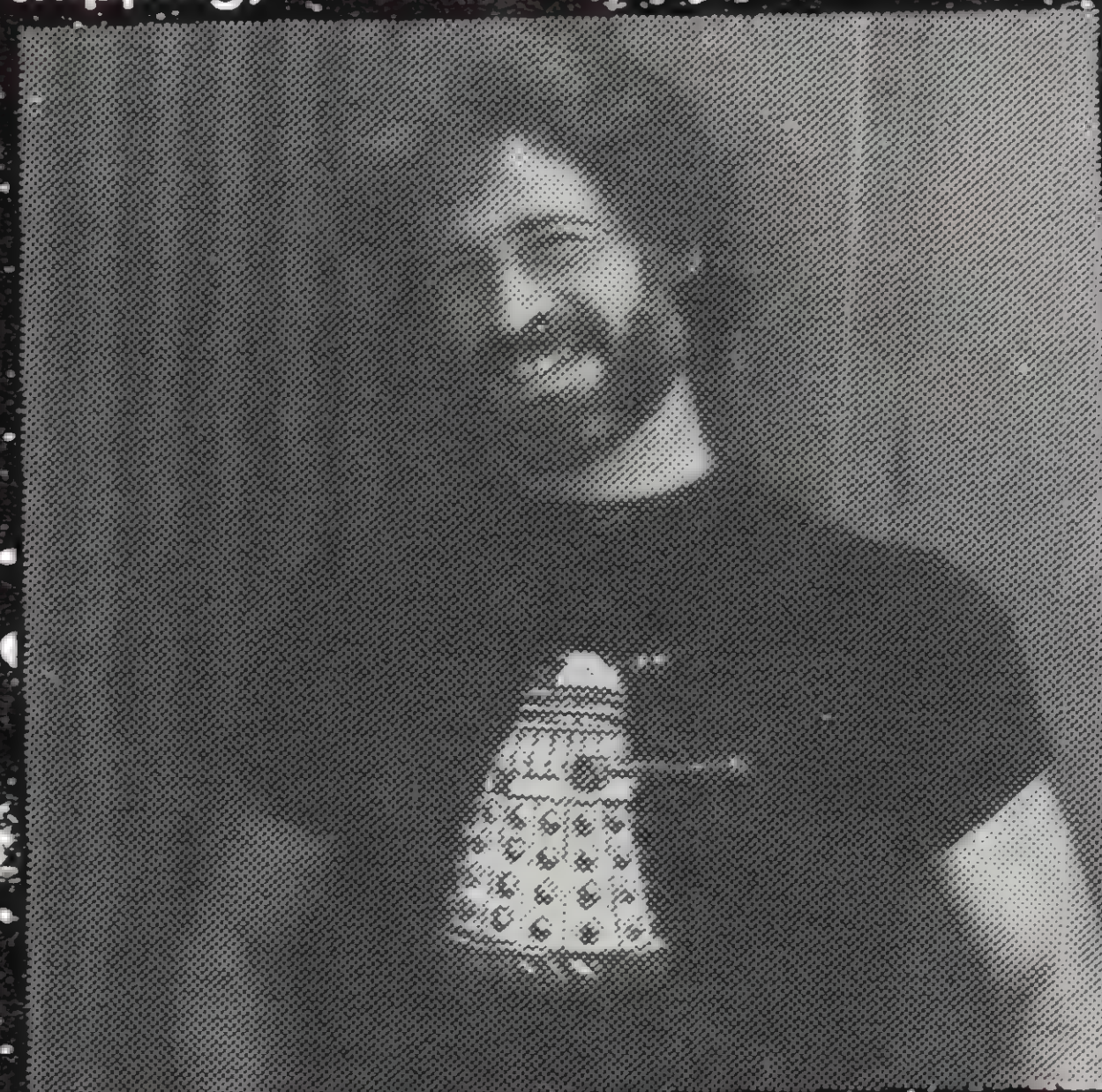


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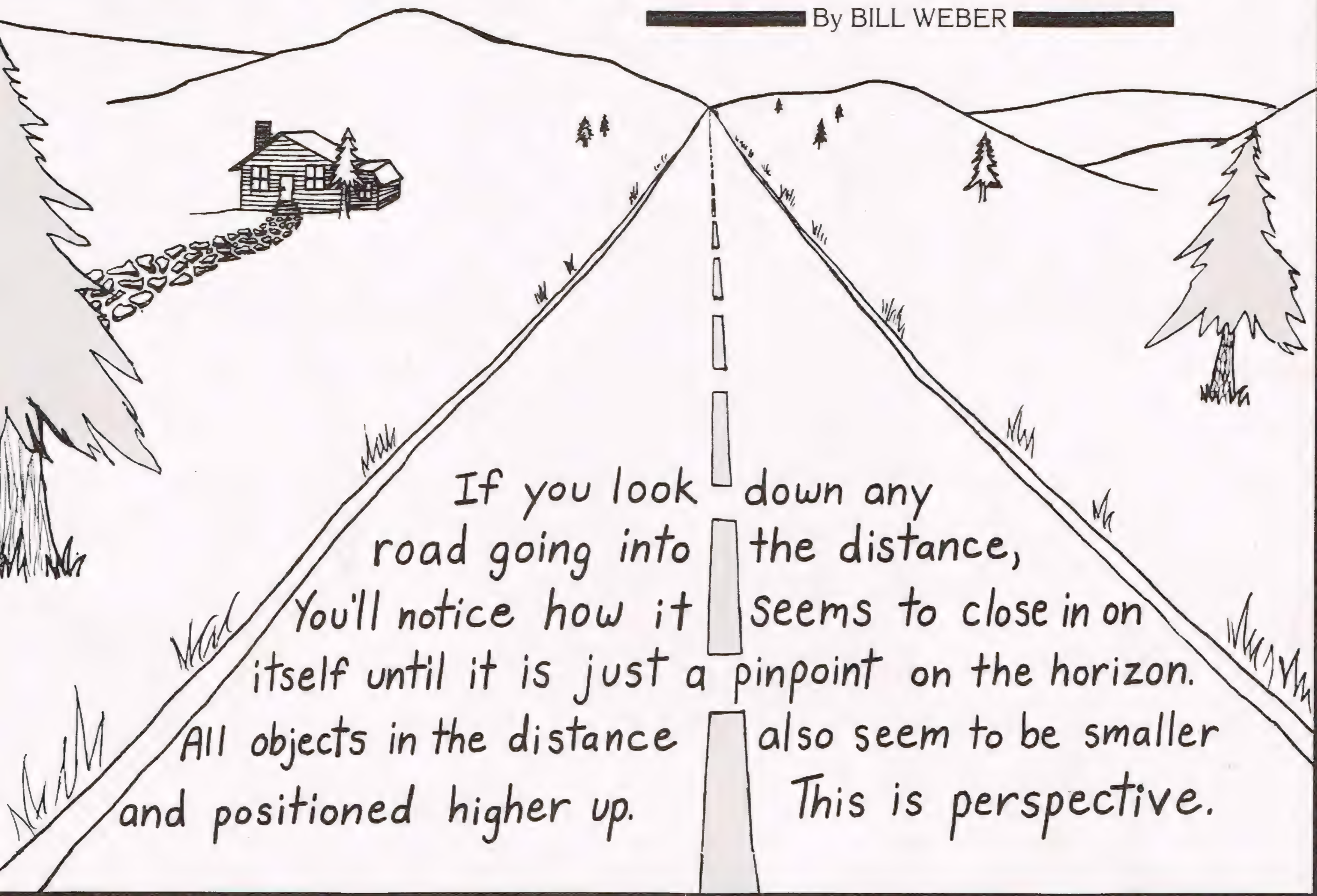
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Miniature Sets

The secret behind realistic miniatures lies in an understanding of scale and perspective.

By BILL WEBER



If you've ever become frustrated with your animated films because of the simple fact that, although your characters look great, the sets they interact on don't, then it's important to spend a little more thought and time on set construction. This is especially true when you're intercutting the animated footage with live-action.

Set construction in miniature is an extremely important aspect in stop-motion. Unless your sets are carefully planned out in advance, you may completely destroy the illusion you worked so hard at achieving. Planning is the key to a great set. As in all phases of filmmaking, pre-planning will inevitably determine the quality of your work.

It doesn't necessarily take a lot of money to create realistic miniature sets. It does take extra time and effort, but in the end, believe me, it's worth it. If you can fool your audience into believing the set is real, or at least looks realistic, you've accomplished your objective and your animation will be more effective.

Before the construction of any miniature film setting, you must determine several things. First, what kind of environment do you want to create? Is it a lush green valley, a flat desert plain, or complete fantasy? Second, what does it look like? Is there a city street, a country road with a farm, or just a desolate rocky hill? Your script will answer these obvious questions.

I always sketch my ideas for the set on paper and can then determine what prop elements I'll require, *i.e.*, rocks, bushes, trees, houses, etc. Don't forget to consider the camera angles as well. Will you shoot from more than one angle, or will there be any camera moves?

Once you have a clear idea of the set you want to make, the second question to ask yourself is, 'What scale should I use?' The size of your character will determine this. If you haven't yet made your character, then you have a lot more freedom of choice. Pick a scale that's comfortable for you. Usually stop-motion puppets range from three inches to one

foot tall; although some may be smaller or larger. It always depends upon the complexity of the script.

As I say, the size of your character will determine the scale of your set. For example, if you have a six-inch tall monster puppet character which in the film, is supposed to be, say, seventy-two feet tall, then the scale of your set would be in 1/12th scale. In other words, every one inch in miniature would represent twelve feet in reality. Now if this monster walks past a three story house on the set and the house is supposed to be forty-eight feet tall, then the miniature would be only four inches tall on set.

Determining the scale keeps the set in proportion. Don't worry if you're not exactly correct down to the 32nd of an inch. Make it easy on yourself. Round off the scale to the nearest 1/4 of an inch. No one viewing your film will jump out of their seat and scream, 'Hey! That house is 1/8th of an inch too short.' They won't notice unless it's grossly out of proportion. The important thing is to have it look

believable. Once you have your scale to work in you'll be able to construct or purchase the model houses needed. Train hobby stores are the best source for model house kits and they list the scale sizes right on the box.

Perspective is the second most important element in the creation of miniature sets. I'll explain how you can actually alter and manipulate your scale to create perspective. I'm about to contradict myself here. I said that as long as all your houses and buildings are in the same scale, then your set will be in proportion, however; this also depends upon the placement of the house or building. Where is it on the set? If your character is going to stand right next to it in the frame, then, yes, the house must be in scale to the character. But if a house or building is to be in the background somewhere else on the set, then you'll want to create an illusion of perspective or depth. In order to do this, the house in the background will be smaller than the house the character stands next to.

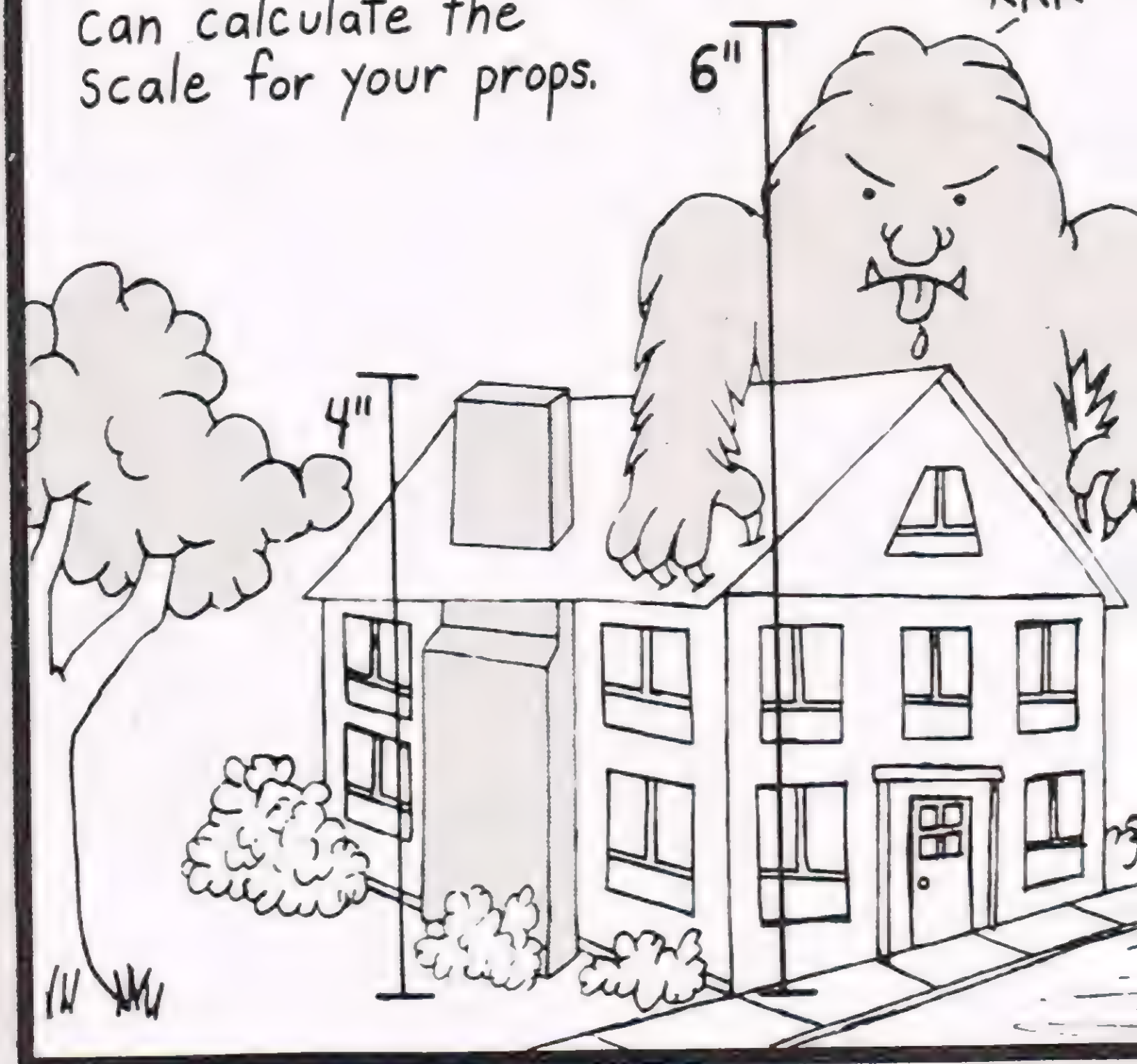
This is where your sets will come alive and will set apart the amateurs from the professionals. To really understand perspective, you must go outside and look down any street or sidewalk. What is it that makes some objects seem farther away than others? Apparent size of the object is one reason: Things farther away seem much smaller than objects up close. Also, they are positioned slightly higher

up than things sitting on the ground near you. If you look at a street going straight into the distance, you'll notice it closes in on itself until it becomes just a pinpoint on the horizon. Observe how the horizon line is the highest point at which objects sit from where you stand, unless you're on a mountain.

In order to create a horizon line on your miniature set, your table top should be set at an angle, anywhere from 5 to 30 degrees—the lowest point of which will be facing you and the highest point at your eye-level. When you tilt your table top in this manner instead of lying it flat, your miniature houses will naturally fall in perspective behind one another. This is called a 'forced perspective' set. If you place a model house that's only half the size of your foreground house, and put it at the back of the table top, then you'll see how far away it will seem, when in reality, it's only a few feet away.

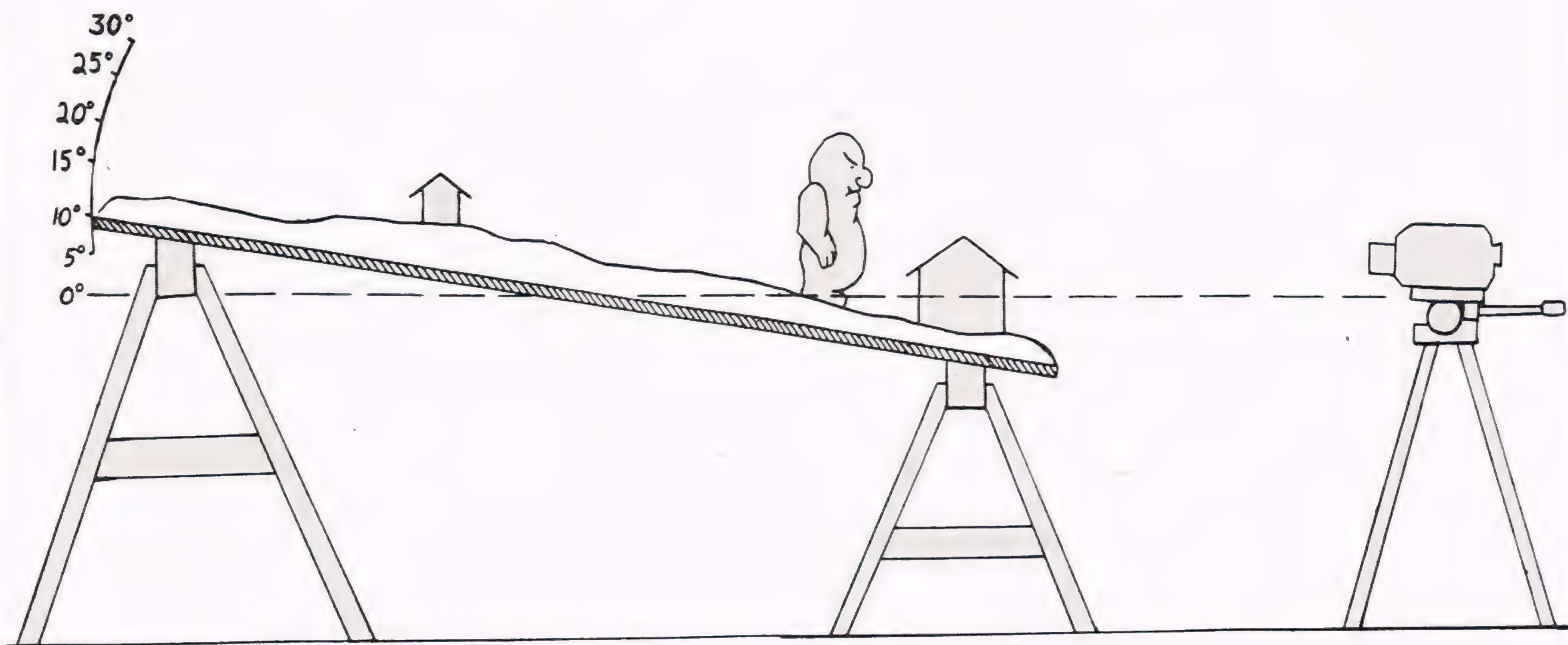
You've now added much more depth to your set than is actually there. The further back you place an object, and depending on its size, the more depth you'll add to your set. Don't limit yourself to one table top, however. With each additional table top, one behind the other, place the next just below the horizon line of the first and tilt it in the same manner making sure it too has a horizon line. You'll find your sets getting larger and larger, and the depth will seem to grow deeper looking like miles away.

Find out the scale of your set by measuring the size of your puppet. Then figure out how tall the character is suppose to be in the film. You then can calculate the scale for your props. RRR



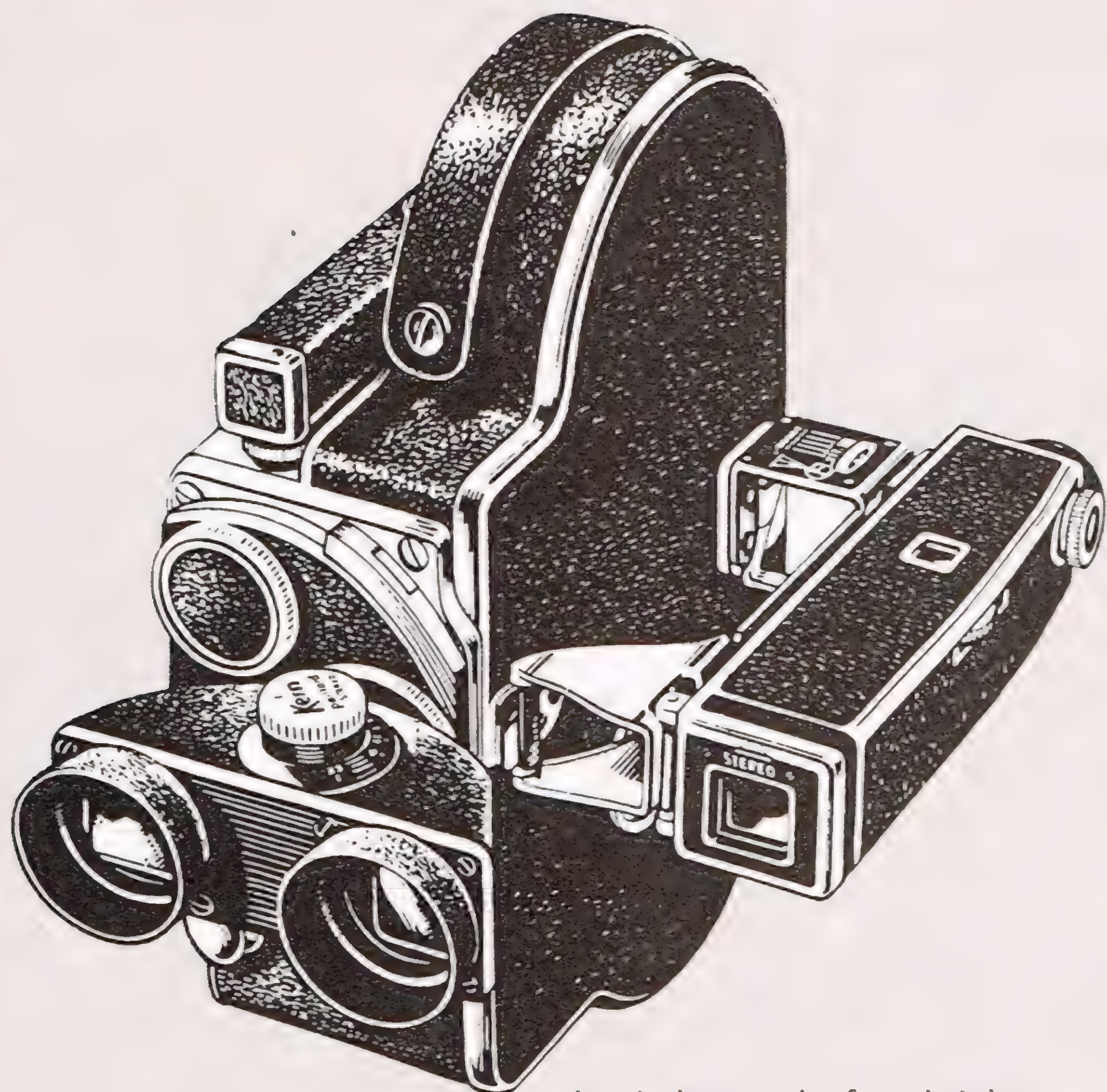
Once you have your scale and forced perspective set drawn out and know exactly what you want, you will be ready to begin construction. In the next issue of CINEMAGIC, I will explain an easy way to create a convincing terrain for your table top, having its own original shape with ground soil and grasses looking like the real thing. CM

To create perspective on your miniature set, position your Table Top at an angle anywhere from 5 to 30 degrees. Place your camera so that the horizon line lies near the top portion of the frame.



Filmmakers' FORUM

A regular department devoted to readers' comments about filmmaking, their problems and solutions.



The Bolex camera with normal 3-D attachment fitted to the front of the camera.

3-D Success Stories

... I just wanted to let you know that the 3-D system you featured in CINEMAGIC #33 worked 100% better than I thought it would!

I must admit that I had my doubts when you consider that two mirrors on a clipboard isn't the most rigid invention ever produced, but when I projected the finished product it was great. I would recommend that whomever decides to build this, does spend the extra money on the front surface mirrors. I didn't and had to go to a bit more trouble in reducing the reflections from the center joint. The picture also suffers a bit from the two surfaces, but it's nothing too drastic and most people don't even seem to notice it.

I encountered no cross-talk when I used the 45/135 degree polarization and I was able to tilt my head from side to side without ghosting (excluding the extremes, of course).

I also used an anamorphic lens on the camera so that I could restore the picture to the standard ratio and not some awful vertical image.

By projecting back through the A-lens onto a wide screen, you can also view the finished film in 3-D by using the cross-eye method. Some people are unable to free view 3-D images this way,

but it does make for a brighter and sharper picture.

While this system isn't going to produce results like the IMAX theatre at EXPO '86 (the first 3-D film. I've seen where the images actually appeared to touch the 3-D glasses), it will hook one if they have an obsession with the third dimension. I'm currently involved in building an attachment like the Elmo unit. I feel that such a unit has more to offer in ease of use and final outcome.

Thanks for a *great* article; I've been waiting a long time for something like this.

Bartley Busse
Box 36
Neidpath, Sask.
Canada S0N-1S0

... Today I got a copy of CINEMAGIC #33 which contains your story on amateur 3-D movies.

It seems that you left out regular 8mm! Back in the fifties, I shot some 8mm 3-D footage using the Elgeet system. I had a Bolex H-8 converted: the aperture was opened to 16mm width and the center lens mount was converted to C. I didn't have to shoot only trees because I had a format almost equal to the conventional 8mm frame.

For projection I had a Bolex G projector altered slightly: two sprockets were opened to 16mm width but retained the 8mm teeth. As you may know, the G projector would take either 8mm or 16mm. So I used the opened 8mm gate with unslit film on

16mm reels.

I still have all the equipment and may soon do some more filming.

Of course, using regular C-mount lenses gives me 8mm widescreen without anamorphics. I think it was 2.75 to 1, and I have some nice widescreen footage. That format really did justice to the Grand Canyon, and I especially like my time-lapsed sunrise and sunset there.

Richard Orr
6506 Western Avenue
Omaha, NE 68132

... I am a student of the Suny Purchase Film School and president of my film academy here in New York. I've just finished my most recent film entitled, "Added Dimension" and I'm proud to say that it turned out just GREAT!

It's a Super-8, 3-D film which tells the story of the explosion of the space shuttle in deep space. I must admit that shooting a film in 3-D is not an easy task.

I and members of my academy spent a lot of time and money trying to perfect this system. But now that the film is completed, I think that we've come up with a practical and inexpensive way of shooting a 3-D film.

If anyone is interested, I would be happy to send you some information on 3-D filmmaking in hopes that you won't make the same mistakes we did.

Ronald Armstrong
NY Academy of Filmmaking
304 East 156th Street
Bronx, NY 10451

Cheap Corpses!

... I have been working with special makeup effects for over three years, now, and I thought I might share some of my successes with you and the readers. By successes, I mean tests that may or may not have worked for me, but proved useful.

To make cheap human corpses, in advanced decomposition, I have found a work saving method for realistic detail and effect: For the core, the obvious choice would be a human skull. There are plastic model kits on the market that work quite well for this.

I mixed gelatin and water together, about two parts gelatin to one part water. Basically, you do a paper mache build-up over the skull. Sculpt it a bit larger than you want the final product to be,

especially around the chin. Paint with acrylic, in browns and dark greens. When the gelatin dries, it will shrink (overnight, in a dry room) and wrinkles will form. For the tissue to dip into the gelatin, I used Kleenex or... er... stationery.

One problem I used to have with fake blood was that it wouldn't soak into clothing realistically. I found that by mixing more water and adding glycerin, it worked much better, though it didn't stick to latex, though I don't know why.

A good coagulated blood can be made by mixing green food color into your blood mixture, or by using mucilage instead of corn syrup as a base.

A good fake skin can be achieved by melting down derma wax and mixing in shredded cotton balls or strands from cotton wadding. This makes the sculpting easier for larger surfaces, but it should be blended using regular derma wax, without the cotton. Latex need not be added to acrylic for painting latex masks, providing they won't need to move around a lot. I have had a lot of success by watering down the acrylic, and applying it as a wash. You can achieve very professional looking results, with practice.

If you have problems with styling the hair of your creations, especially animation models, mix fabric stiffener with water, about 1/4 stiffener, and spray it on with a window cleaner bottle, or any other reusable spray bottle. It will, unfortunately, lighten the color of the hair, so if you use this method, I would recommend using a darker hair colour than you need, normally. This also restricts the movement of the fur or hair during the animation, and helps eradicate the annoying ripple effect that seems to curse animation with models that have hair.

For small cable controlled monsters, or delicate movements of the face or hands, I use a thin steel cable, which is used to hang pictures. It can be purchased at hobby stores, and comes on a spool. It is extremely tough, and is about the same thickness as fishing line. I strongly recommend it for eye mechanisms and mechanical hands. I have used it on much heavier constructions, and I have never had it

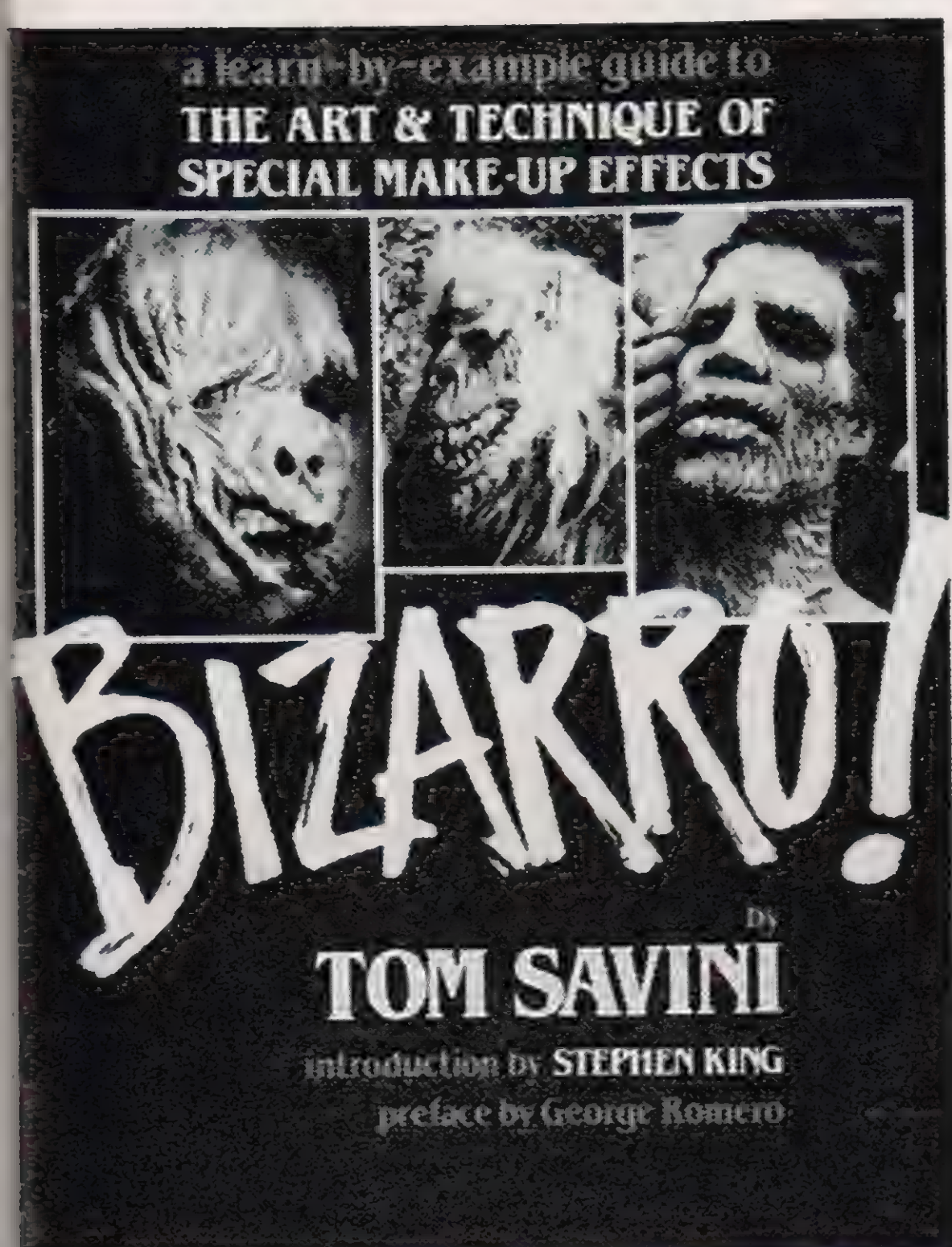
snap on me, yet. It's resistant to friction and abrasion.

I hope that this information will come in handy for anyone in the effects field, or anyone breaking into it.

Brad D. Proctor
147 Opeongo Road
Renfrew, Ontario
Canada K7V-2T2

Savini's Book

... In the "BOOKS" section in issue #20 you review a new book that was recently published by Tom Savini entitled *Grande Illusions*. My question is how can I get a copy of this book? I have gone to nationally known book stores (B. Daltons, Walden Books, etc.) and they don't have it nor do they show on their records that the book was ever published or even exists. Was this a limited edition book or is this book no longer in print? I'd appreciate any



assistance you can give me to obtain this book. Thank you for your time and assistance.

Dennis L. White
144 Ellsworth Lane
Whiteman AFB, MO 65305

Tom Savini's excellent guide to special effects makeup was first published in 1983 under the title Grand Illusions. It has since been re-issued by Harmony Books (a division of Crown Publishers Inc.) under a new title, Bizarro! in paperback for \$9.95. Your local bookstore should be able to order it for you; the ISBN number is: 0-517-55319-8. Savini is working on a sequel, which should be published later this year. I also recommend STARLOG Video's Scream Greats, Volume One: Tom Savini, Master of Horror Effects. Distributed by Paramount Home Video on VHS Hi-Fi and Beta Hi-Fi videocassettes, the program takes you behind the scenes in graphic detail as Savini produces some of his most challenging effects. Laserdisc users will ap-

preciate the CAV version which allows frame by frame manipulation of the images as well as random access.

Armature Construction

... All of us at Omni Film enjoy your magazine in every aspect—especially the "how-to" articles. Unfortunately, I, Matthew Schneider, the president of Omni Film, discovered the magazine only recently. I managed to get a hold of some of the tricks of the trade by buying back issues, which is great fun. Even with those back issues, I am still not clear on how to find the materials for building a miniature figure. Especially the armature! Also, I am not 100% sure on how to make the miniature! Could you please steer me and my crew in to the right CINEMAGIC back issue that tells about how to make the miniature figure and where to find armature parts. Or maybe a book that gives directions? Some of my friends, who also make movies, are also plagued with the same problem. All of us at Omni Film would appreciate a response. Thank you.

Matt Schneider
Omni Film
241 Bayberry Lane
Westport, CT 06880

A Winner!

... I would like to thank you and all the judges for the 1986 CINEMAGIC Short Film Search for awarding my film, "A Spark of Being" First Prize 8mm, and for providing my wife and I with one of the most exciting experiences of our lives.

I would also like to take this opportunity to let you know that I would be more than willing to share my experiences in producing "A Spark of Being" with the readers of CINEMAGIC. I have long been a subscriber to CINEMAGIC and have collected nearly every issue of it. I also have the book "Film Magic" which, along with CINEMAGIC magazine, provided me with the information I needed to produce "A Spark of Being."

"A Spark of Being" was the first film I've made in which I used metal armatures and foam rubber muscles for the animated models. I discovered the methods for creating these in the pages of CINEMAGIC and "Film Magic." I also used backwinding, animation created on an Apple computer, front projection using slides, and my own variation on glass painting, animating "sparks" on a sheet of clear plastic in front of the

set with acrylic paint.

I also understand that past winners in the Short Film Search have been signed to development deals. I am putting together a script for a feature-length version of "A Spark of Being." If you have any suggestions as to who I should submit it to, please let me know.

Thanks again for a fantastic experience. My wife and I immensely enjoyed the awards ceremony, all the other films that were screened, and the Creation Convention. We are both Trekkers and were thrilled to see Majel Barrett and Robert Lansing. To everyone at CINEMAGIC, Live Long and Prosper!

Tom Triman
311 Guinida Lane #4
Anaheim, CA 92805

Turning Pro

... I have just finished working as the special effects props manufacturer for the feature film *The Pink Chiquitas* produced by SC Communications, directed by Tony Currie and starring Frank Stallone, Sylvester's younger brother.

The Pink Chiquitas is a science fiction comedy that features a large pink meteor named Betty as one of the main characters. One of my tasks was to build Betty, a meteor four feet in diameter that would glow, throb, smoke, ooze, shoot laser beams and speak. Also, it had to roll down a hill, fall into a lake, rush through a flooded mine shaft, and be hit by a forty foot flame thrower blast.

Among my other duties, I made several gruesome zombies, meteorite eggs, a glowing meteorite fragment and several special sets, one of which had to be sunk in a swimming pool.

I have had experience writing for magazines before, I am also a screenplay writer, and was wondering if you would be interested in an article about the film and the creating of the special effects. You might be interested to know that this was my first job in a special effects related area. Until this time I was an interested amateur who worked mainly as a video tape editor and screenwriter. I became involved in *The Pink Chiquitas* when I met two of the crew members on a bus from Niagara Falls to Toronto. Sitting together, we struck up a conversation and discovered that we worked in the same business. We talked about our interests and hobbies and I mentioned my passion for building weird and wonderful things. They gave me the producer's name and the very next

morning I found myself at SC Communications. After showing examples of my work, I was taken to the Art Director, who asked me to make a scale model of the meteor that would throb, glow, smoke and ooze slime. A week later I came back with my meteor and was hired on the spot for the length of the film shoot.

Before I had finished my work on the film I was offered several more jobs as soon as I was free. My latest project is an hour long rock video titled "First Contact With Synchronicity," which is a science fiction fantasy. In this film I am building a model of Atlantis that will have a volcano erupt, laser effects, and will end with the destruction of the city. Also I am creating over a dozen latex masks for the main character that will cover many races and ages, some mythical.

A lot of the credit for any success that I am now enjoying must go to your magazine which only instructed me but also inspired me. I have photographs of all my works from the creation to the final outcome as it will be seen on the screen.

If you would be interested in an article or articles concerning these films, I would be most happy to send them to you for your inspection. I hope you find them acceptable for your publication.

Mark Arnold
475 The West Mall #1004
Etobicoke, Ontario
Canada M9C 4Z3

CINEMAGIC is always pleased to receive readers' submissions for publication. In fact, the magazine depends upon the willingness of filmmakers to share their experiences. Writer's guides are available by sending a self-addressed, stamped envelope (#10 size, please) to the CINEMAGIC office.

A Direct Line

... Readers who have access to CompuServe can contact CINEMAGIC'S Editor David Hutchison directly through Easplex E-Mail. His User I.D. is 71036,1477. He can also be reached through M.C.I. Mail #136-7254.

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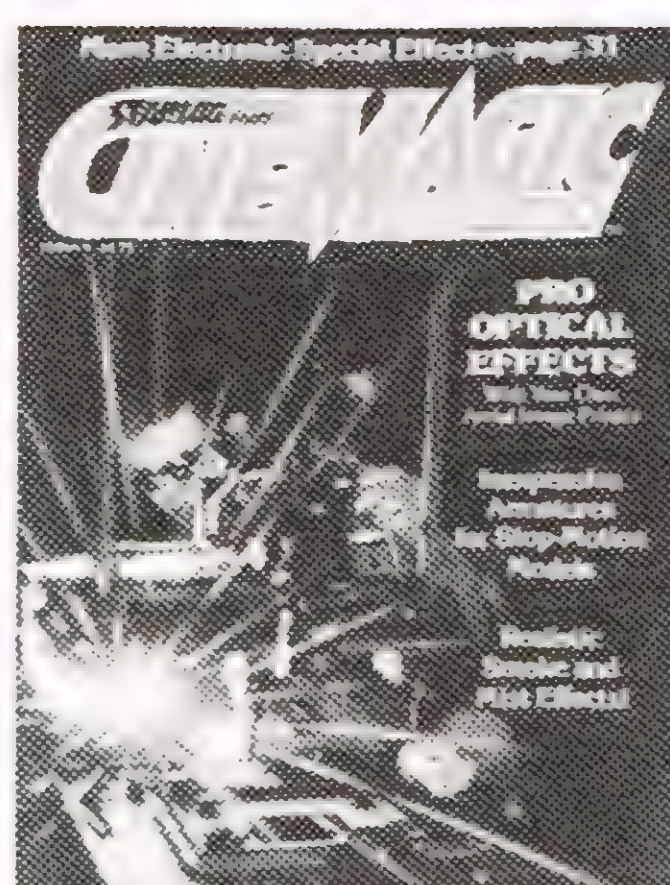
CINEMAGIC BACK ISSUES



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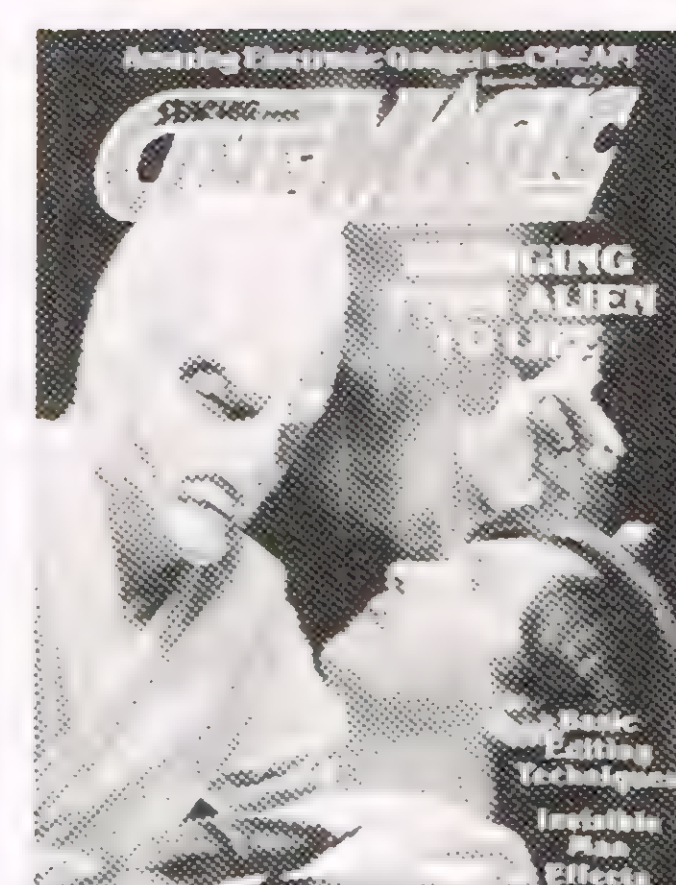
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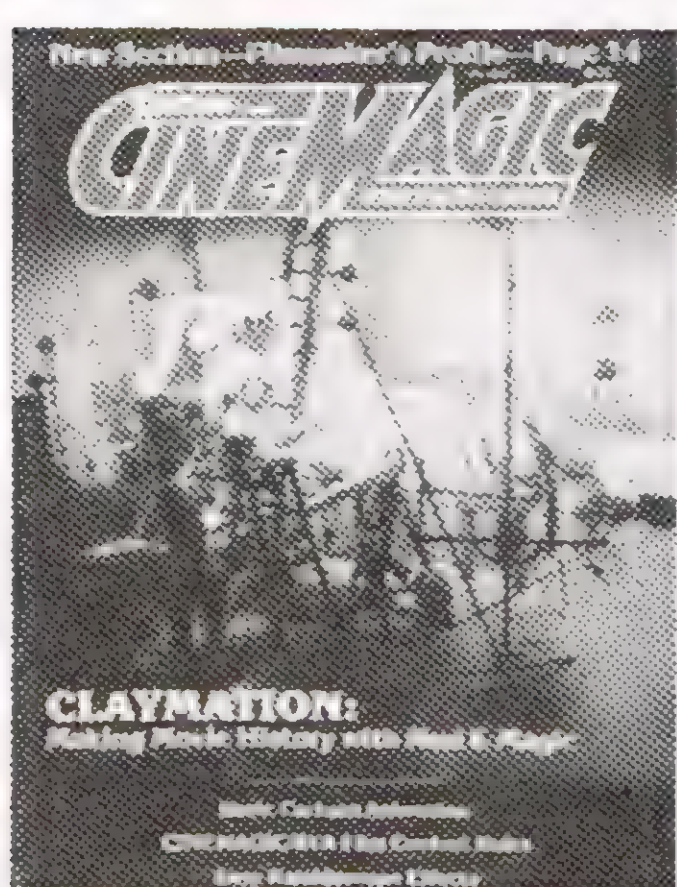
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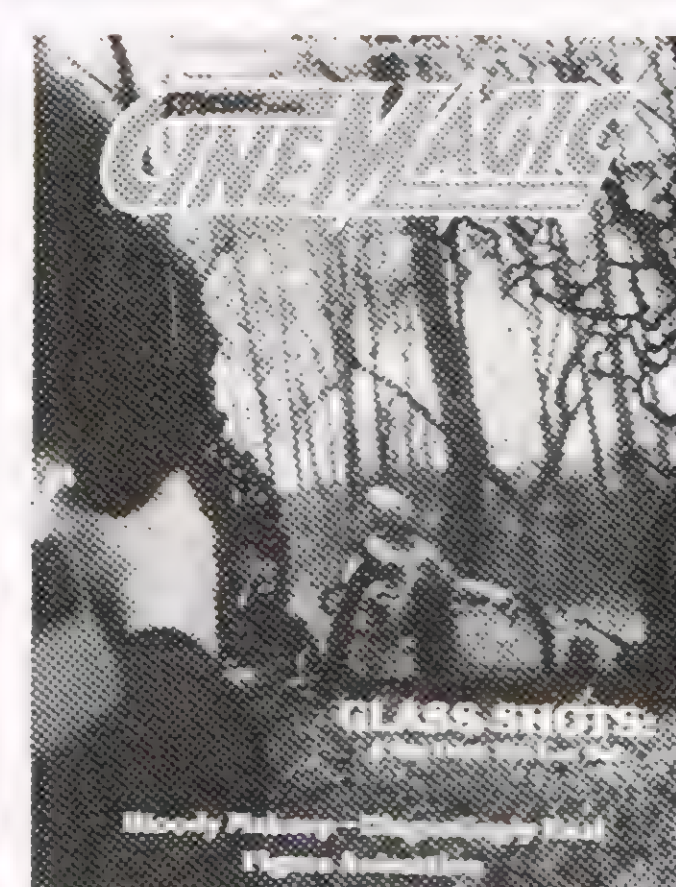
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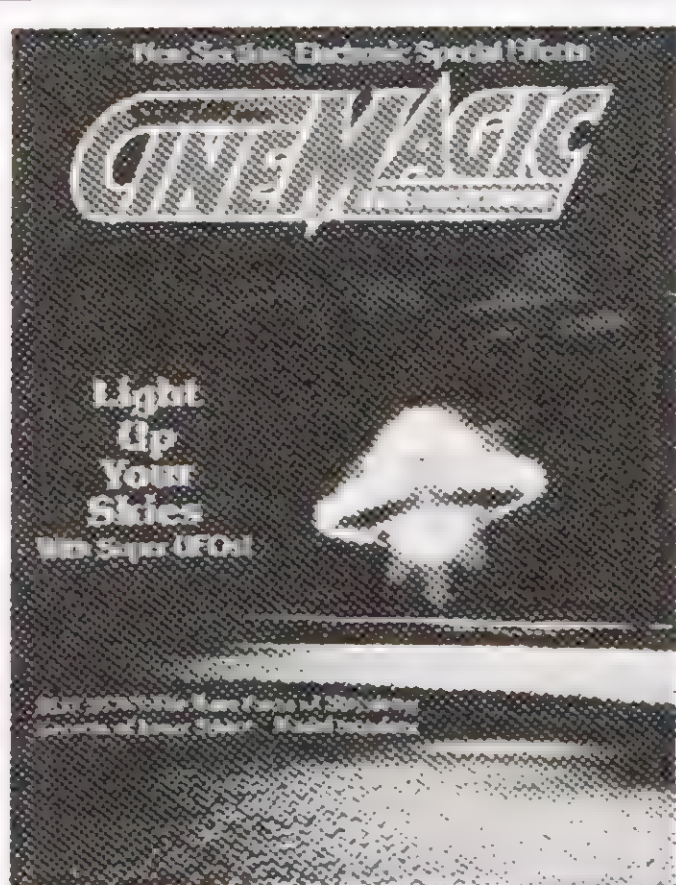
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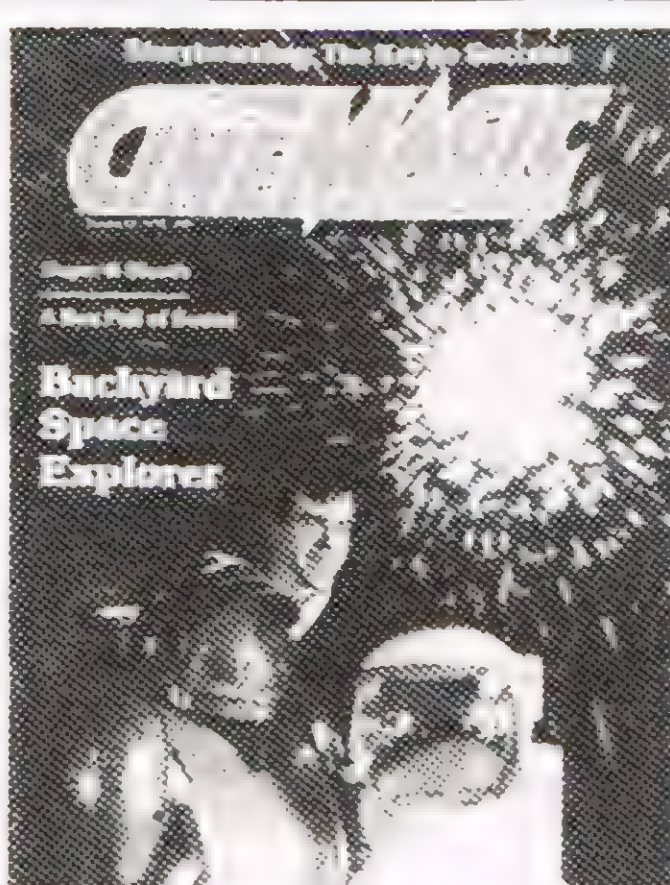
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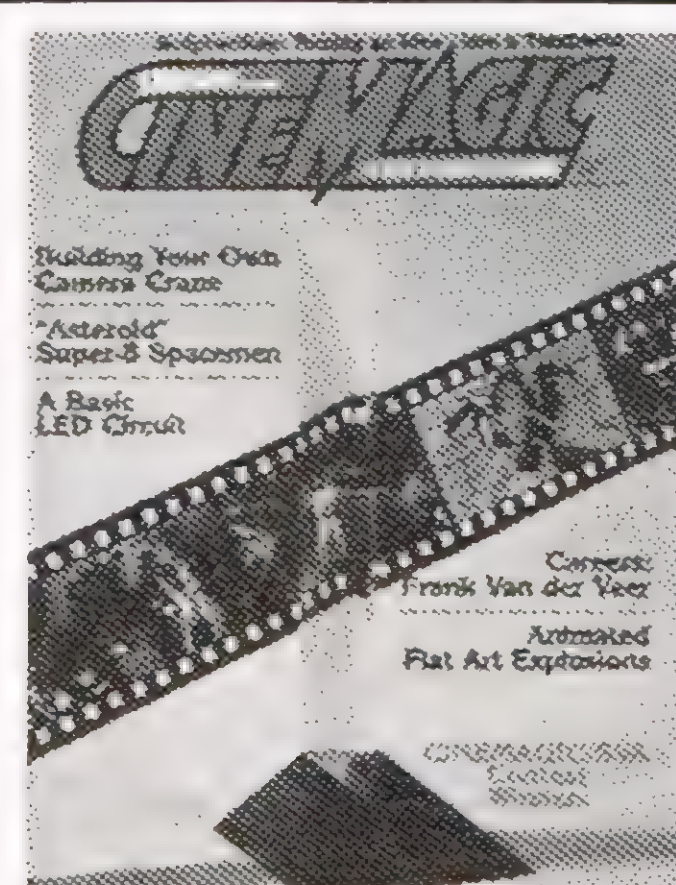
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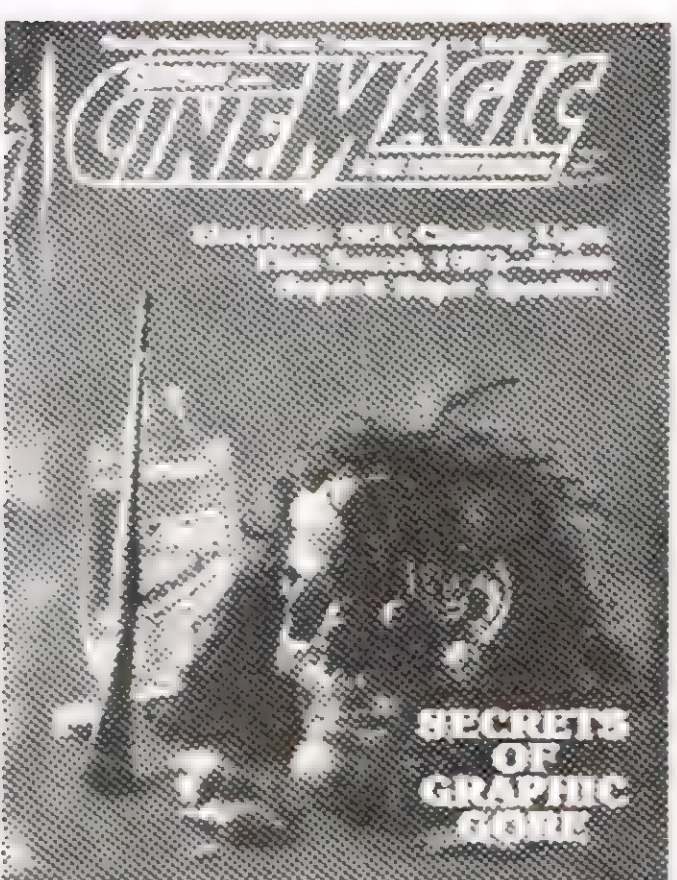
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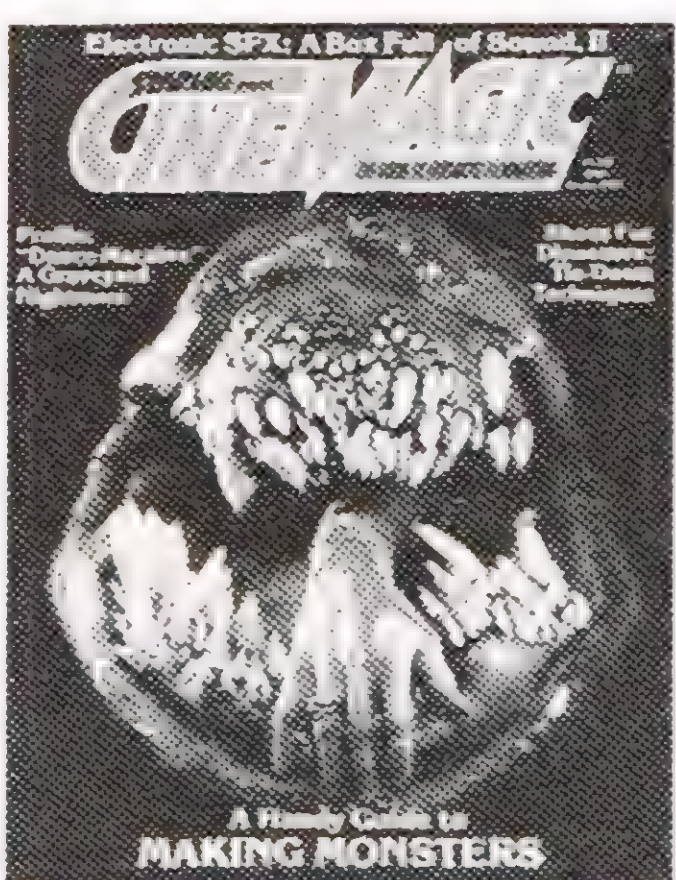
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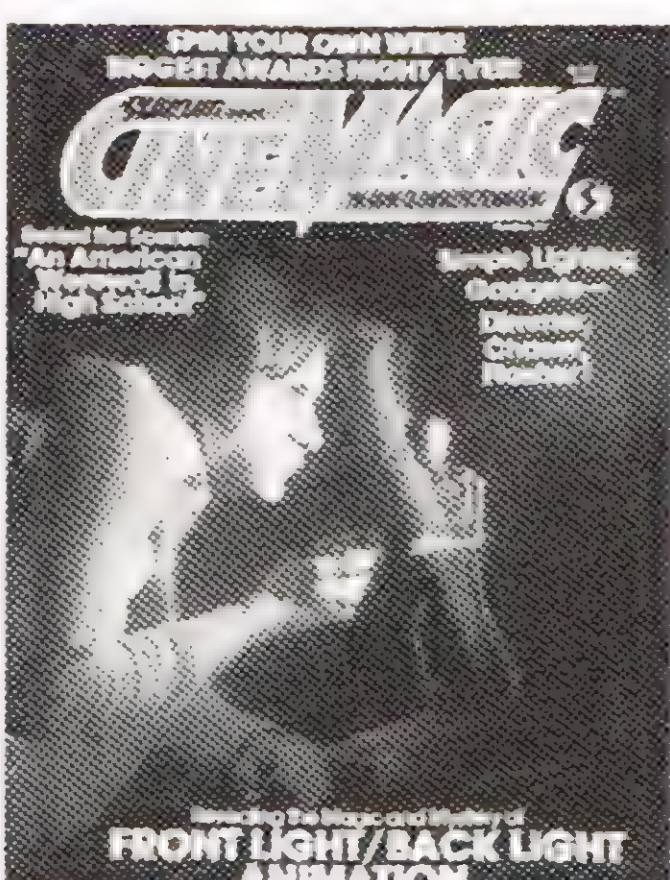
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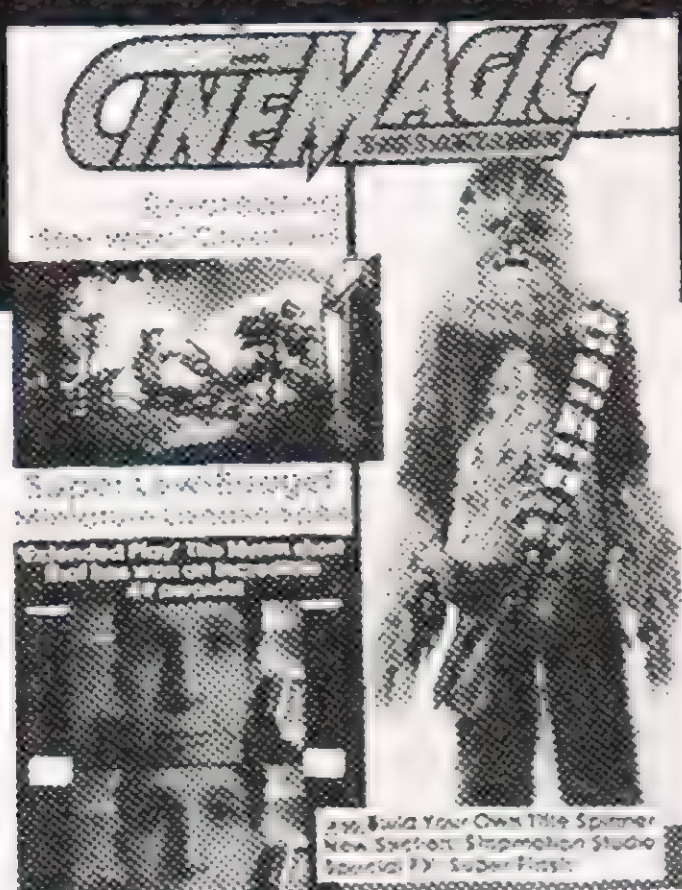
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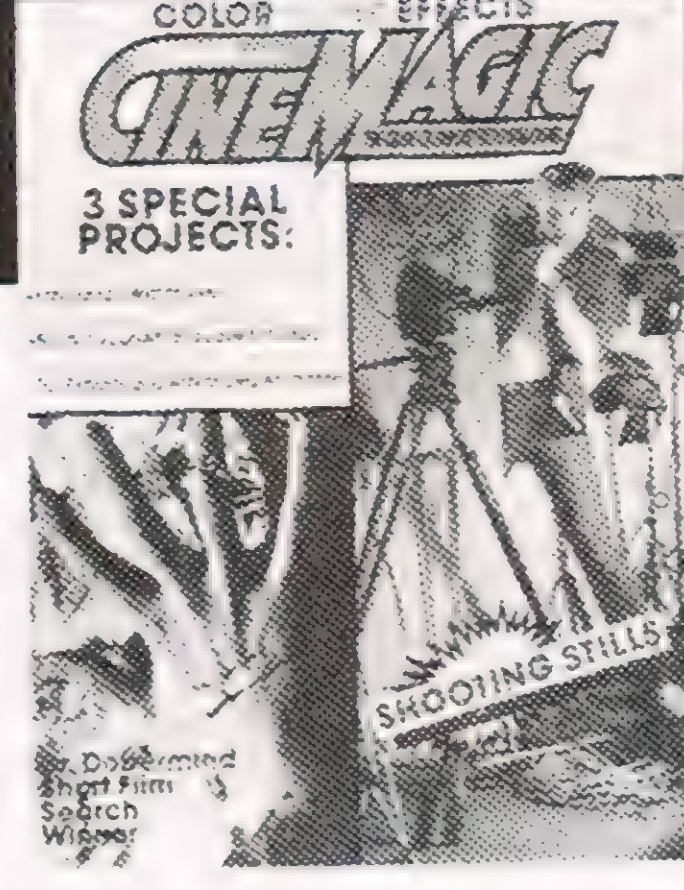
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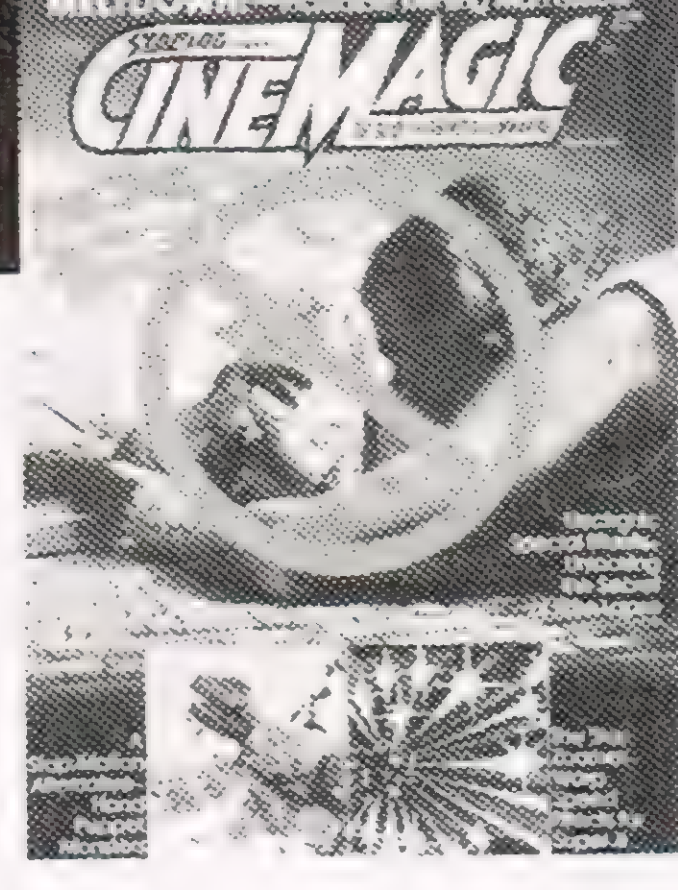
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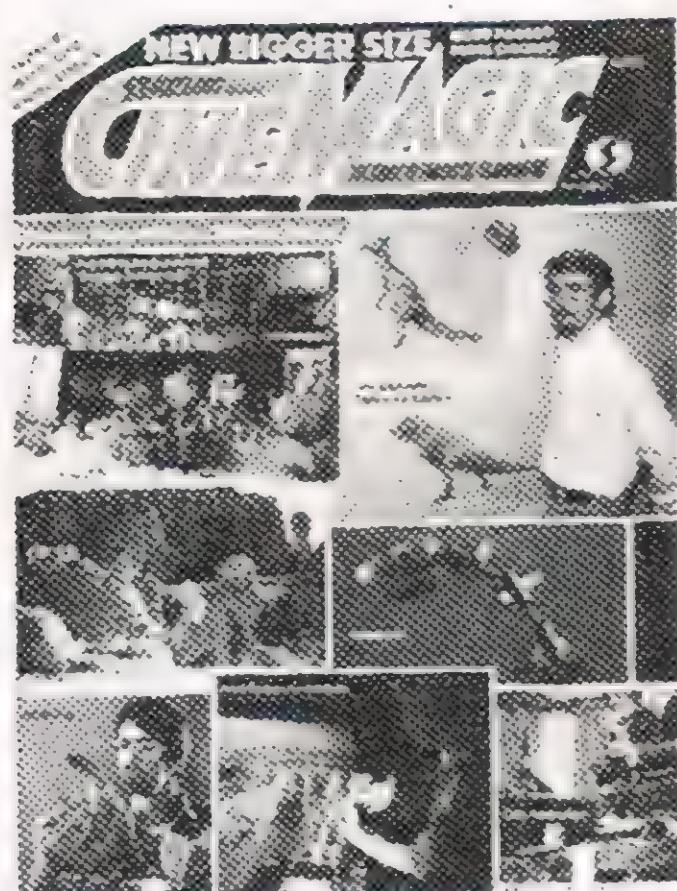
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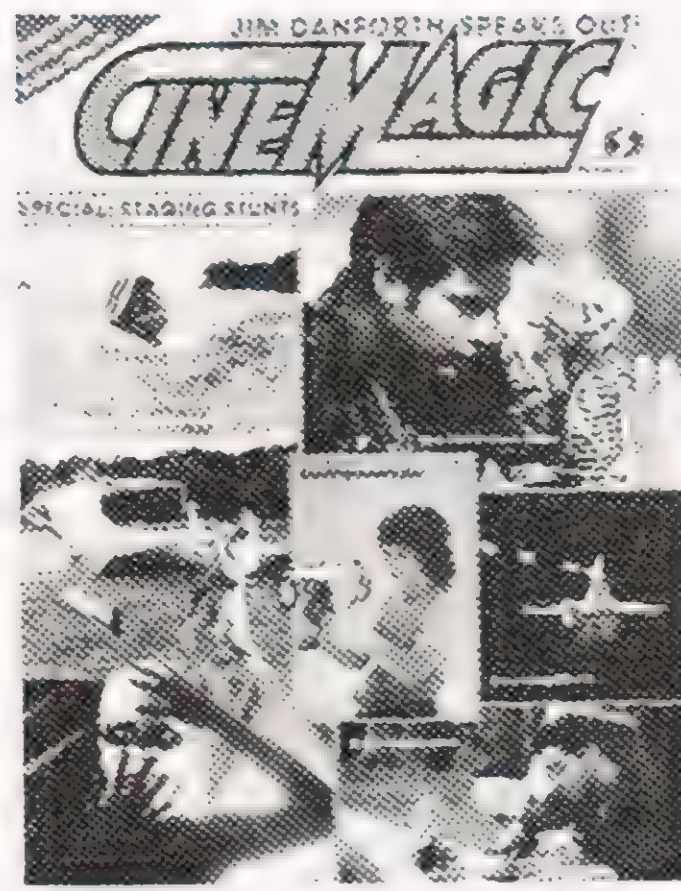
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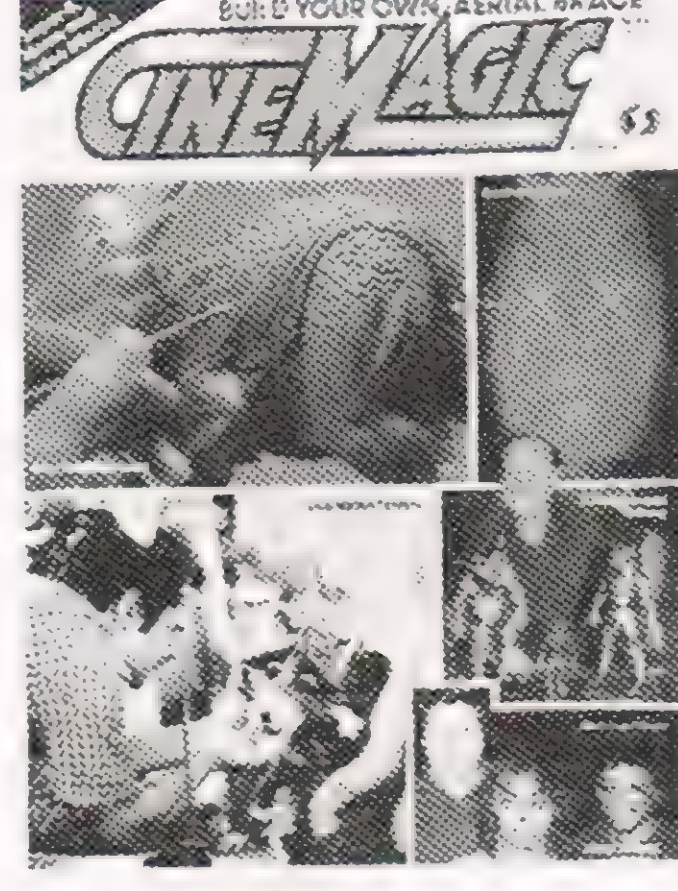
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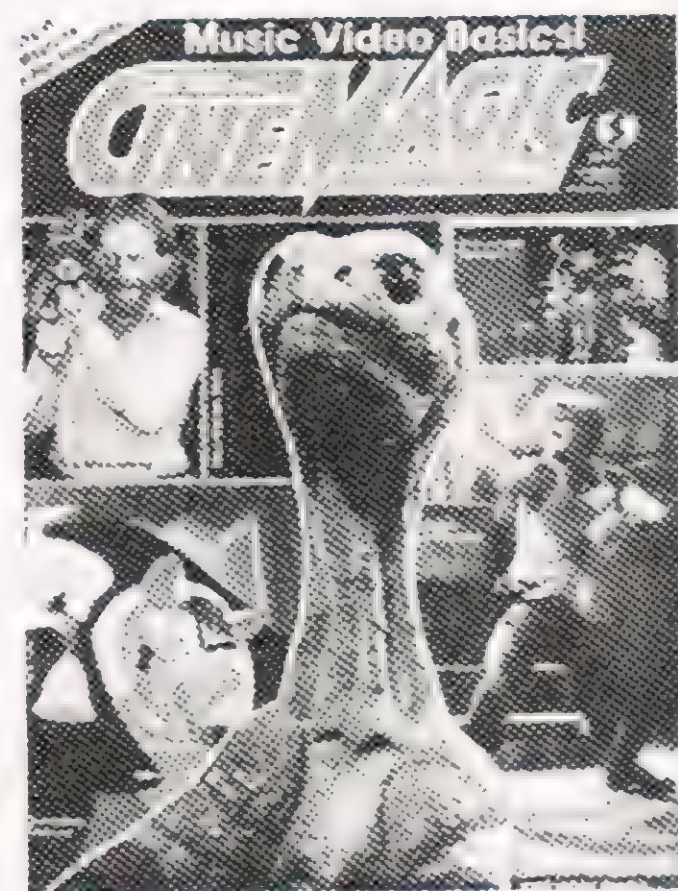
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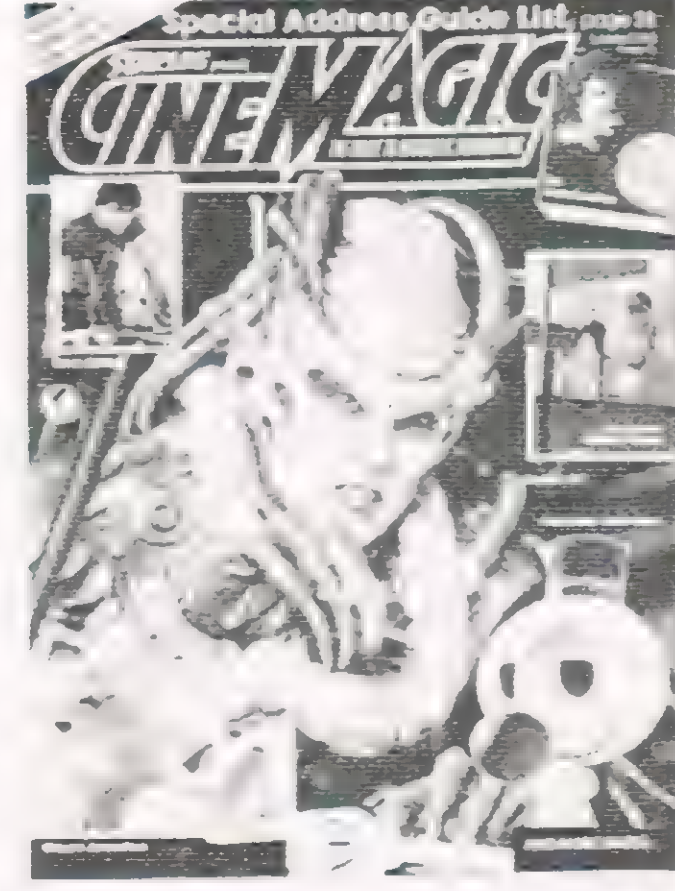
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#35—Melting Head FX; Supply Source List; Captain EO; Miniature Perspective; Set Construction.

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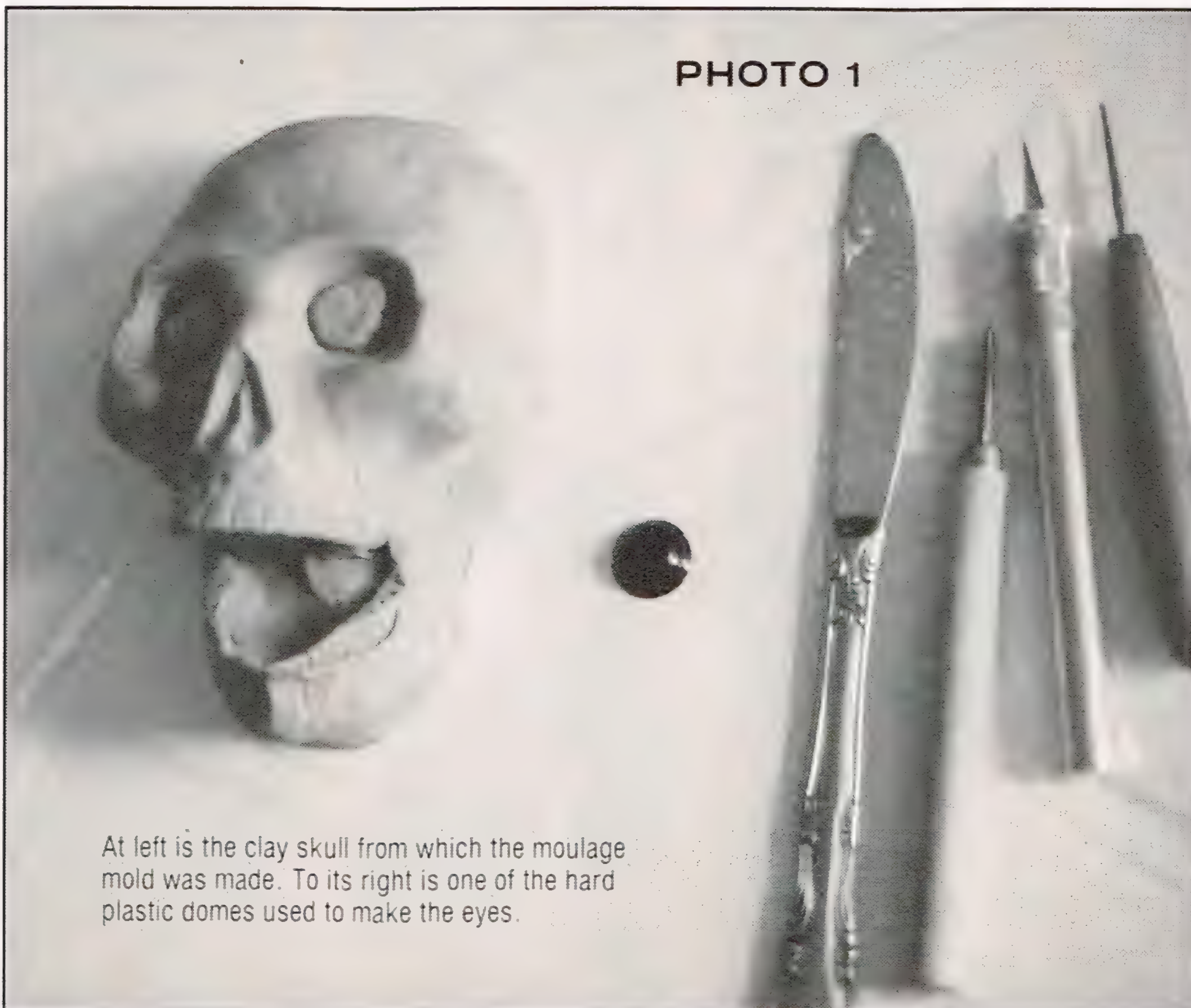
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MELTING HEADS

Down to the Bone!

By JOSEPH GROSSBERG

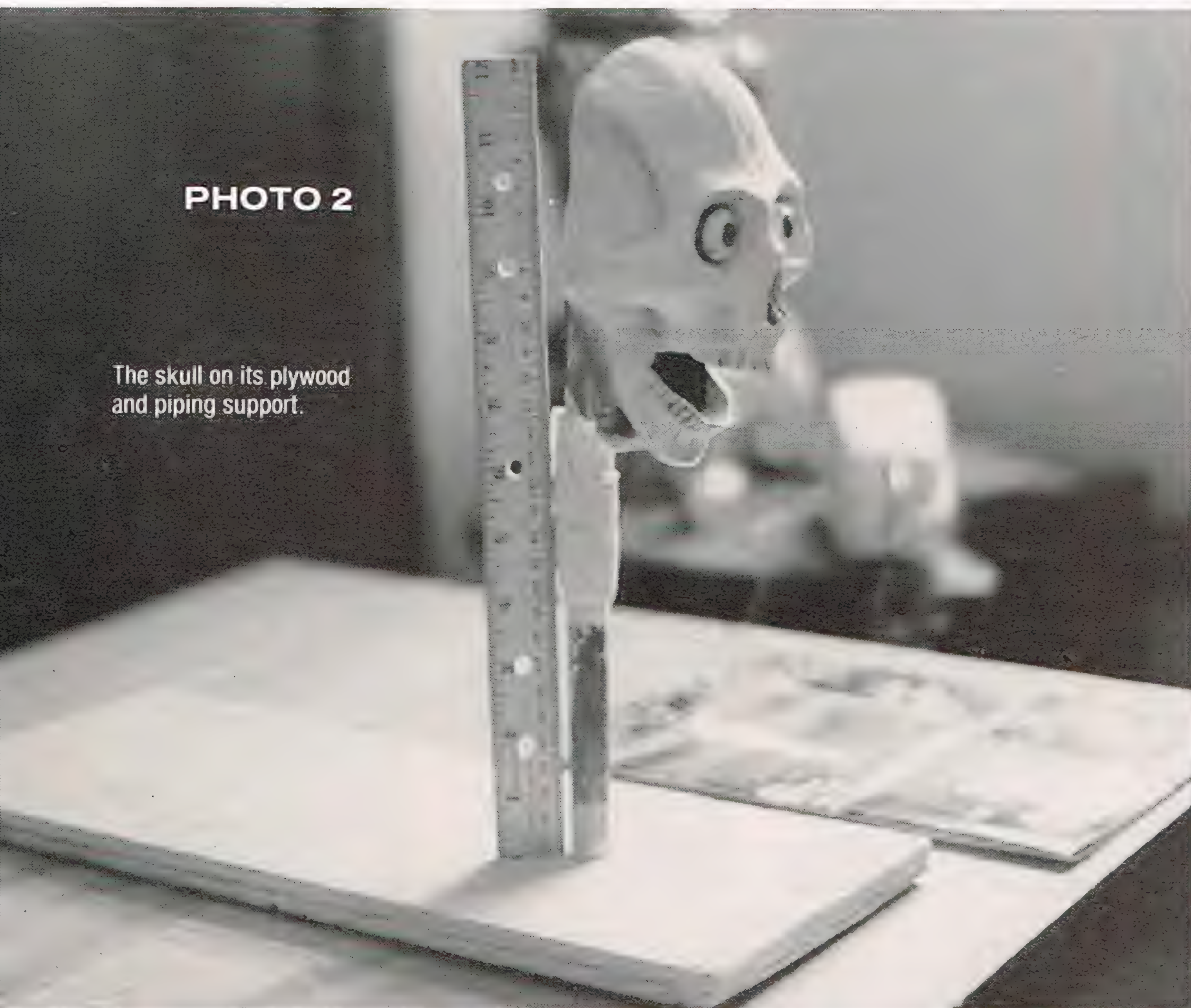
PHOTO 1



At left is the clay skull from which the moulage mold was made. To its right is one of the hard plastic domes used to make the eyes.

PHOTO 2

The skull on its plywood and piping support.



On a recent project I was faced with the task of filming a soldier's head as it was melting. The final effect was to be similar to Toht's head melting in *Raiders of the Lost Ark* (for good photos of this see STARLOG 54, p. 59). The effect in *Raiders* was done by building up, in thin layers, wax flesh on a skull. This was then melted down with two large heaters and a small hand-held one. Filming was done in time lapse, an action filmed at less than 24 fps, so that it appeared to take seconds to melt instead of minutes (FANGORIA 14, p. 57).

This is basically the same procedure that I used. Right off, I thought of several short cuts to save time and money. Since the head was to be filmed in a neutral space with nothing to indicate its size, it didn't have to be full size. I found that good realism could be achieved with a head only seven-inches high. Also, since it was to be seen only from the front, only the front half of a head was needed (see photo 2).

My first task was to build a support for the skull. I took a one-foot piece of 1/2-inch copper piping and attached an elbow to it. To this, I attached a 3-inch piece of piping. Next, I had to attach this to the base. For this I cut out a 6-inch by 1-foot piece of 1/2-inch plywood. Into this, I drilled a 1/2-inch hole about 6 inches from one end and inserted and epoxied the longer end of the piping. Make sure when this is done that the 3-inch piece faces forward, so it can be inserted into the skull.

Next I had to build the skull. I knew the skull would have to be heat resistant, so I decided plaster would be best. Rather than just sculpting from a block of plaster, which can be very time consuming and difficult, I sculpted one in clay. From this a moulage mold was made. When sculpting your skull it is important to remember that moulage mold will be a one piece mold. Any deep undercuts will prevent the easy removal of your clay sculpture. As can be seen from photo 1, I reduced the undercut under the jaw with a clay wall. When viewed from the front, this addition will not be seen, so the skull appears normal. I then casted the skull with Ultracal heat-resistant plaster. While the plaster was still wet, I inserted the 3-inch end of my support into its center. When the plaster dried, the skull was tightly held (see photo 2).

The skull was painted bone white with acrylic paint. For the eyes I painted two small hard plastic domes. These were given two coats of gloss to give them a permanent shine. They were epoxied in place (see photo 3).

My next step was to form the basic shape of a face. This was done using white paraffin. This layer is a sort of fatty layer which gives an understructure and fullness to the face. When melting the paraffin, cut it into small chunks and place them in a foil pan. Then use a heat gun (CAUTION: Read all instructions before

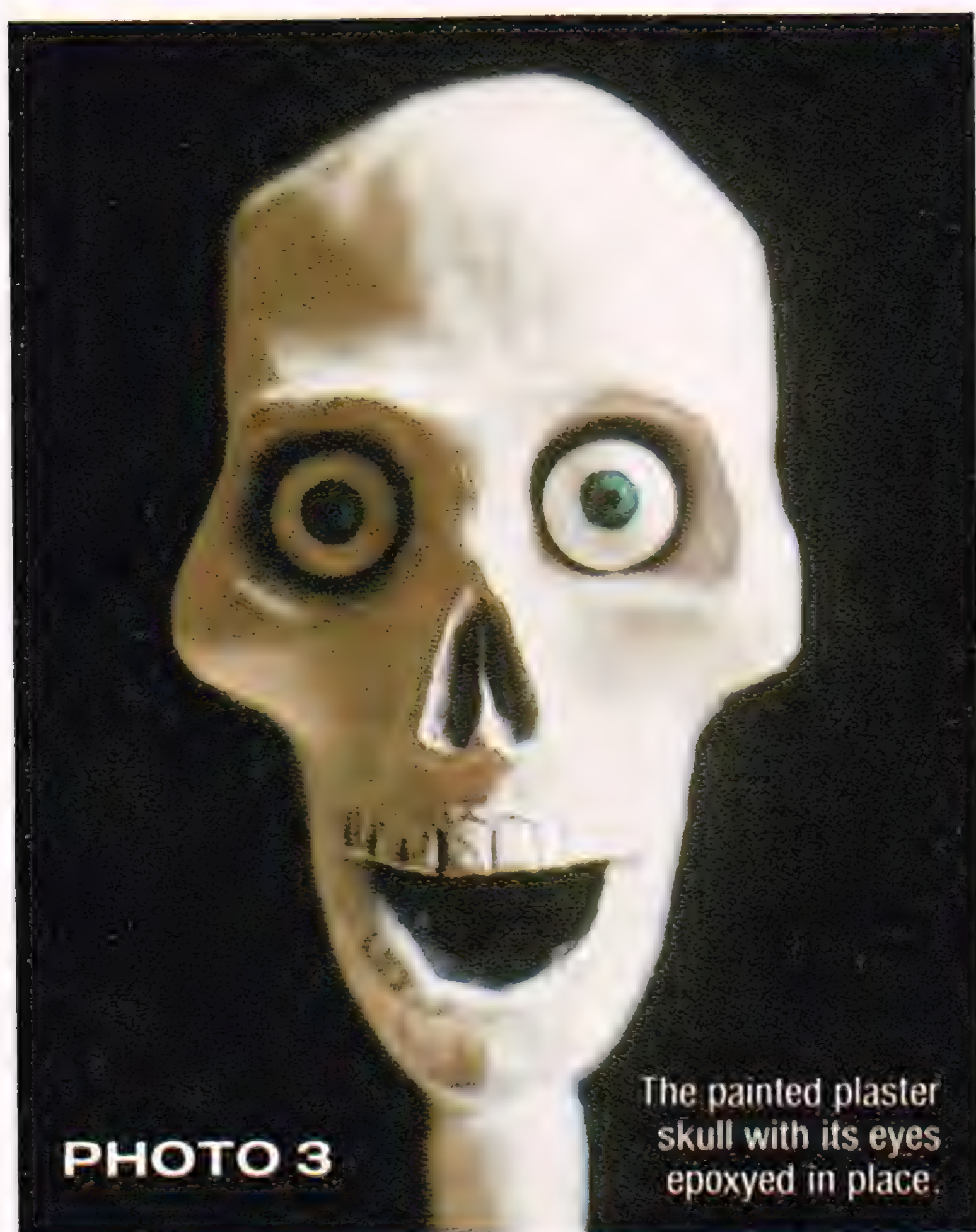


PHOTO 3

The painted plaster skull with its eyes epoxyed in place.



PHOTO 4

The rough-shaped piece of paraffin for the cheek.



PHOTO 5

The completed understructure for the cheek.



PHOTO 6

using this tool) to melt the wax. If you want to buy one, a heat gun is available at any hardware or paint store. Mine is the Super Stripper 1500 made by the China Brush Industries. I bought it at Rickles for \$17 on sale. The melted wax is then poured onto a sheet of tin foil. It is important to keep the layer relatively even and thin. When the paraffin is dry, the foil layer can be peeled from under it.

The paraffin is broken into a basic shape to fit an area. For example, a small triangle for a cheek (see photo 4). This piece is heated again until it becomes pliable, and then is shaped onto the skull. The heat gun is used to melt its edges, adhering it to the skull. This process is continued until the entire understructure is formed (see photo 5). When you work with wax you will notice a point when it is no longer runny (even inside), but not yet

brittle. This is the perfect time to shape the wax, since its temperature isn't very high and it can be easily handled.

Next, I had to cover this layer with a layer of muscle and tissue. After several tests with color paraffin I decided to go in another direction. My final solution, to get a deep blood red layer that would melt correctly, was crayon wax. I used five red jumbo Crayola crayons and melted them in a foil pan. I then poured this onto the paraffin face to form the second layer. Note: it is important to cover the eyes and front teeth with tin foil so they do not get coated (see photo 6 and 7).

The final outer 'skin' layer was easily applied derma wax. The wax is soft and a layer can be flattened by hand and applied to the face. I used two shades of the wax to get realistic coloring and smoothed it down with acetone (cold cream can also

The red crayon wax being poured on the paraffin layer. Note the tin foil on the eyes and teeth.

be used). Details were placed using clay tools.

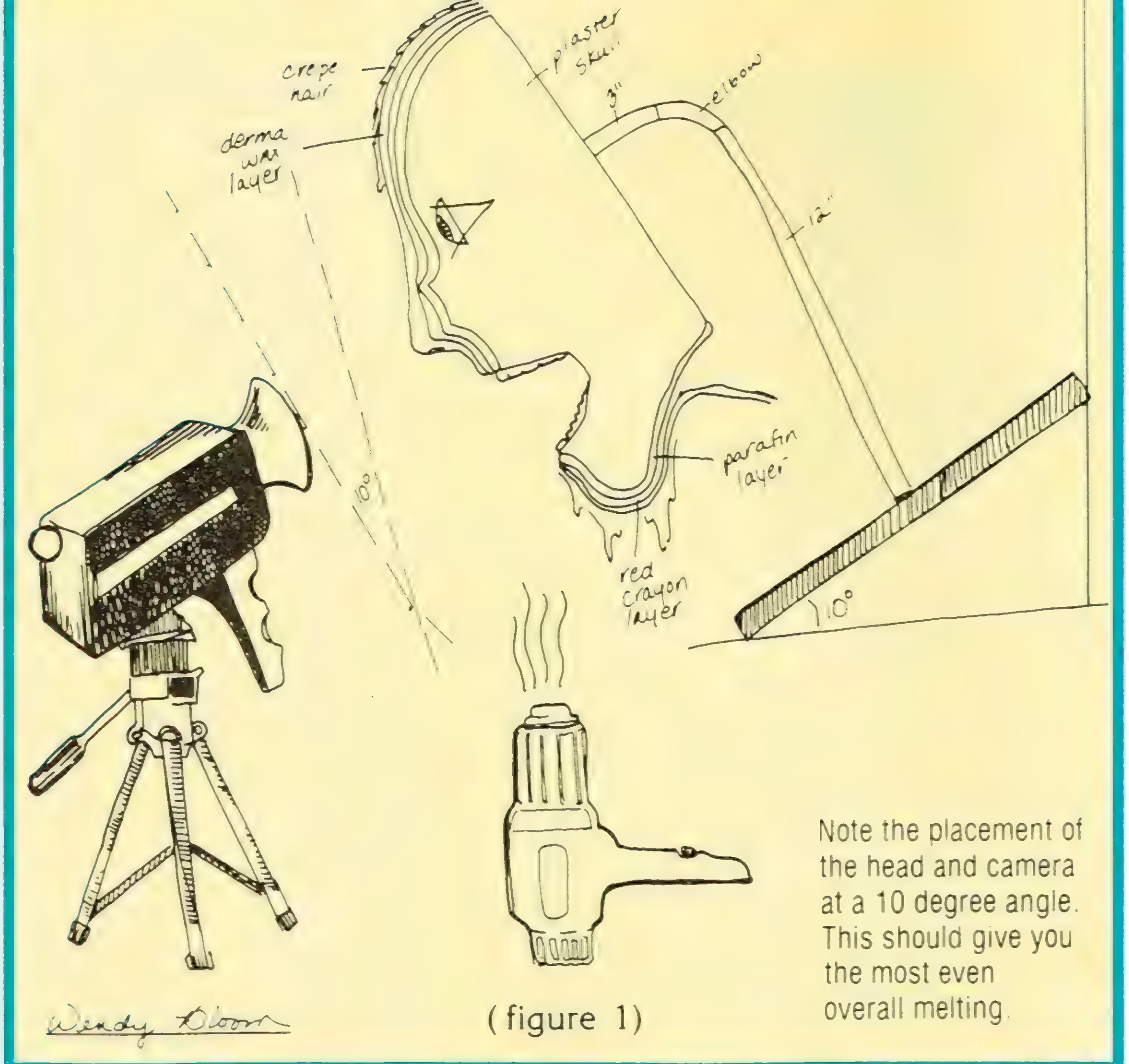
The process of adding hair was done using crepe hair. This hair comes in a braid which must be unravelled and straightened using a steam iron (for more information see Richard Corson's *Stage Makeup*). One end of the hair is cut straight and dipped into the melted paraffin. This is then flattened under a flat blade. It is important to trim the hair before placing it into the derma wax. The wax will hold the hair. It should be placed from the lowest to the highest point of hair growth (see photo 8).

The head's small size and the layer's low melting point made it possible to melt the head with just a hand-held heater. Although I feel that two heat guns, each



**PHOTO
7**

The complete
red crayon
layer.



(figure 1)

Note the placement of
the head and camera
at a 10 degree angle.
This should give you
the most even
overall melting.



PHOTO 9


The final effect.



**PHOTO
8**

The complete head with crepe hair attached.

melting a single side of the face would be ideal. When filming, I tilted the head 10 degrees forward to get the most even overall melting. Subsequently, the camera was tilted 10 degrees back to face the head straight on (see figure 1). The head took 6½ minutes to melt. Filming at one frame per two seconds made the effect take seven seconds. This was optimal screen time since it gave the audience a chance to see the effect without being so long that it began to look fake. The final effect, as you can see by photo 9, is stunning. Also, almost as important, the final cost is very low. My final cost, including the heat gun, was less than \$30.

This same technique can be used to make melting hands, chests, or anything. In my last film *Embrace*, I used this technique to get a dynamic title effect. 

GRIP KIT



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The Fax Division of Alan Gordon Enterprises Inc. announces the introduction of the affordable *EOS/FAX Video Animation Controller* for "frame by frame" U-matic recording. This revolutionary step-saving controller opens up a new world for animators and video artists. The EOS/FAX video animation controller is a full function microprocessor designed especially for 3/4" U-matic video recording.

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Available in two models; the AC 580 controls the Sony VO5850 recorder and the AC580J controls the JVC machines; CR8250 and PR8800. For additional information, contact Tad Malone at (213) 466-3561.

Gadget Bags

KIWI introduces 2 New "City Bags." These stylish multipurpose shoulder bags hold photographic and video equipment, plus the contents of a briefcase in zippered and slash pockets—and



are an ideal combination for picture taking as well as business, shopping, travel, school, etc.

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Robomation

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Professionally designed and engineered, Robomation is the result of nearly 20 years of continuous development by Lynx Robotics founders Alvah Miller and Paul Johnson. Both are associated with Apogee, Inc. one of Hollywood's major special effects companies as motion control experts for feature films, television programs, animation and commercials. Miller was awarded a Technical Achievement Award from the Academy of Motion Pic-

ture Arts and Science in 1978 for his work on *Star Wars*. Johnson was instrumental in developing the first stage motion control for *Star Trek*, *The Motion Picture*.

With Robomation, you get six channels of motion control functions: 1. Film camera frame rate, 2. Critical lens focus and follow focus, 3. Camera platform verticle travel, 4. "X" axis (east/west), 5. "Y" axis (north/south), 6. Continuous 360 degree compound rotation.

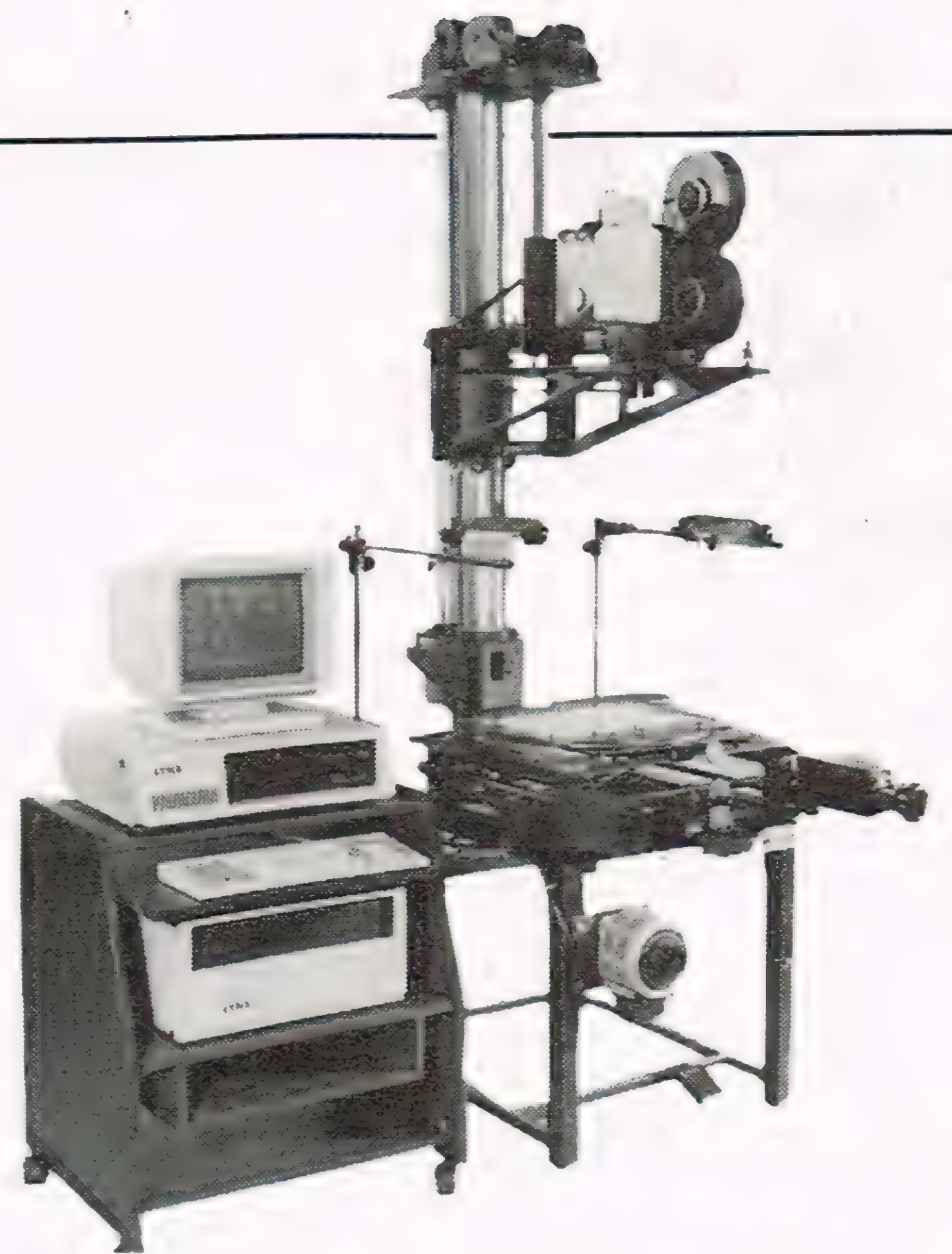
Additional channels, (up to 42) can be optionally provided for any other functions needing control, i.e. fade, dissolve, motorized film camera rack overs, video camera lens zooms and more.

Any shot that involves moving the table or camera is easier to achieve with Robomation control. The computer figures out all the intermediate positions for each frame and moves each axis as fast as possible, reducing shooting time, saving money. Moves which would not be attempted otherwise become commonplace and repeatable.

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advantage of the Robomation motion control system is that it uses an IBM PC-compatible 640K computer, with access to the largest library of business and personal software available. For smaller businesses, this means that the system can also be used for word-processing, budgeting, scheduling and accounting, when not in use for motion control animation. The Robomation System comes with an easy-to-read user manual, quick reference guide, installation instructions and all necessary technical documentation.

Additional information on the Robomation System can be obtained by contacting Tad Malone at (213) 466-3561. Priced at \$235,000 for the complete package; Fax Senior Stand, IBM PC-compatible computer and Lynx Robotics Motion Control in the hands of everyone.

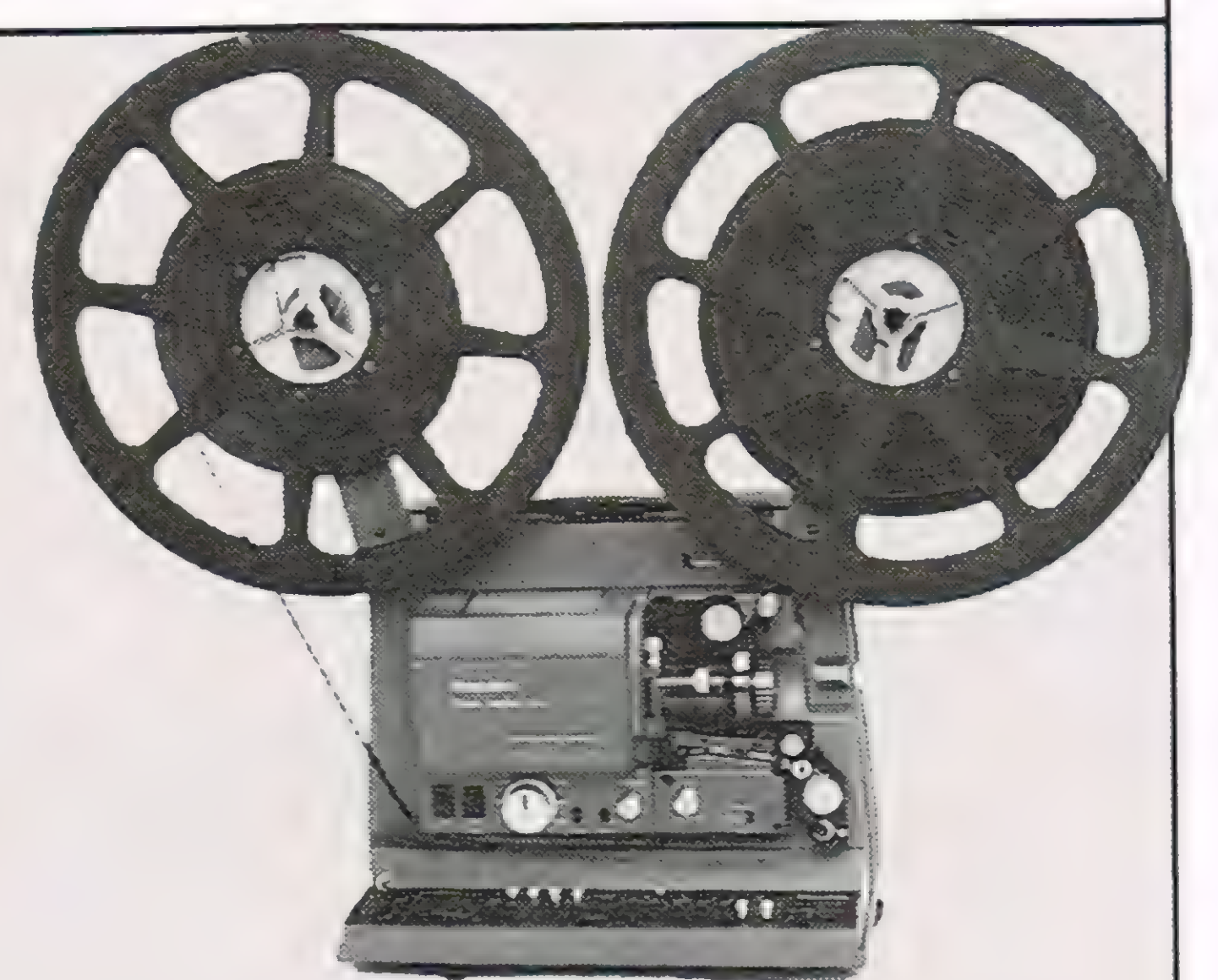
708 EL Projector

Beaulieu Industries of France once again innovates the Super 8 cine market with the introduction of their new generation of stereo projectors, the 708 EL Stereo and the 708 EL Stereo Xenon. Expertly constructed of metal and steel with precision adjustments characteristic of fine European craftsmanship, the 708 EL is the ultimate Super 8 stereo sound projector. It offers the best super 8 picture possible, with sharp bright images and special features that identify it as a machine unique in its league.

The 708 EL offers several unique features. The lamp side pressure plate on the 708 EL allows film to pass through the gate lying totally flat. Standard Super 8 projector systems will slightly bow sound stripped film in the gate, varying the distance between the lens and the film emulsion. This unique design allows for corner to corner sharpness unmatched in Super 8. Up to 2 hours of uninterrupted viewing can be

enjoyed with the projectors 2,400 foot reel capacity. The various recording and playback capabilities of the 708 EL give it the ability to perform as a versatile sound studio. Recording can be done monorally on the main and or balance tracks, or in stereo. Super-imposition, track to track transfer, simultaneous playback with balance and automatic mixing add to the projectors versatility. The sound section control board features a mixer regulator for sound fade-ins, and monitoring. Automatic loading with auto loop system, manual unloading, fast rewind and digital counter make the projector extremely easy to use.

The Beaulieu 708 EL Stereo Xenon Arc Projector has been tested to project Super-8 films at distances compatible with theatre projection. The bright power is insured by an Osram Arc Lamp, offering a sheen 3 times higher than a classical 24v, 250w halogen lamp. Both projectors feature a standard Schneider MC Xenovaron 11-30mm,



f/1.1 lens. The lamp on the 708 EL stereo is 15v, 150w with dichroic mirror; the Xenon Arc Projector has the Osram HTI 250w lamp.

The standard 708 EL Stereo Projector is priced at \$2,500, the Xenon Projector at \$5,500. For more information or to obtain a data sheet contact the exclusive U.S. distributors for Beaulieu Industries: Small Format Audio Visual Inc., 95 Harvey Street, Cambridge, MA 02140, (617) 876-5876.

An Animation Celebration

The most popular films chosen from the 450 short films entered in the competition at the first Los Angeles International Animation Celebration have been compiled into a 90-minute animated feature.

The films in competition were judged by a panel of world renowned animation experts, who awarded cash prizes to the winning animators. The *Animation Celebration* includes the best of the competition and complements the annual International Tournee of Animation by providing animation fans with an additional opportunity to see more new animation as well as entertaining films by well known animators not represented in previous Tournees.

The *Animation Celebration* consists of 22 animated films from seven countries and represents a vast range of animation styles and techniques including computer animation, clay animation, pixelation and traditional cel animation.

Hollywood cartoons are parodied in three films with animation and humor as enjoyable as the classics. "Broken Down Film" by Japan's Osamu Tezuka not only spoofs animation from the silent era, but also pokes fun at the hazards of a faulty print in the hands of a bad projectionist. Tezuka is best known here as the creator of the comic book character Astro Boy. "Cat and Mouse" from Kirk Henderson and Colossal Pictures takes aim at a Tom

*A new animated
feature showcases
animation from
around the world.*

and Jerry team, who are retired in a home for aged cartoon characters, but still find the time and the desire to be at each others throat. Brad Caslor's "Get a Job," from the National Film Board of Canada, recalls Warner Bros'. zaniness as our hero Bob Dog encounters a cast of crazy characters in his never ending search for employment.

Computer animation is celebrated with works from four studios, providing us with an overview of the rapid progress being made in this exciting field. Short computer films by Pixar (formerly a division of Lucasfilm), Apollo Computer and Pacific Data Images are included.

"The Adventures of Andre and Wally B." from Pixar is particularly startling because of its extraordinary animation.

It's as if we have leaped 25 years into the future and Disney has installed computer terminals instead of animator's desks. Part of the reason is that this short features true classic character animation in the Disney tradition. Professional animator, John Lasseter, is Disney trained and the difference from the usual computer cast of bouncing objects and silvery robots is an eye opener. There is also the use of articulated motion blur, which enhances the realistic nature of the characters and the animation. The background is a very detailed highly complicated naturalistic forest landscape that is a fully 3-D computer generated environment. For computer buffs, the images are rendered at standard 500 line video resolution. There are over 800 animation controls for the two characters. On average, 2.9 million polygons are displayed per frame.

Michael Sculli's "Quest: A Long Ray's Journey into Light," is a computer journey into the fantastic and beautiful. The film is about a character who comes from a monochromatic universe in search of the secret icon that represents color and dimension. The architecture was modeled after post modern fantasy buildings. "Quest" demonstrates illumination by refracted light, rippling water and the use of pattern maps, texture and computer generated sound. These effects were generated on a distributed processing network of 108 Apollo work stations—mostly Dn 460's and Dn 320's. The character was designed from Apollo Computer logo.

The original music score for "Quest" was rendered and realized via the CMUSIC software package developed by the CARL University of San Diego. In addition, custom software was produced to facilitate submixing, and format the final output so that it could be piped into the D/A converter.

Chris Wedge created "Tuber's Two Step," a computer animated film about a family of potato-like creatures that celebrate baby's first steps. Wedge is currently an Assistant Professor of Computer Animation at the Ohio State University Computer Graphics Research Group, where "Tubor" was created, but was at Magi/Synthavision during the production of Disney's *TRON* for which he created many key animation sequences as well as a multitude of television commercials.

Two entrees from Pacific Data Images are "A Comic Zoom" (a spoof of the



"Cat and Mouse" from Colossal Pictures is a parody of MGM's Tom and Jerry cartoons.



'Chromosaurus' from Pacific Data Images presents 40 seconds of shiny dinosaurs on the run.



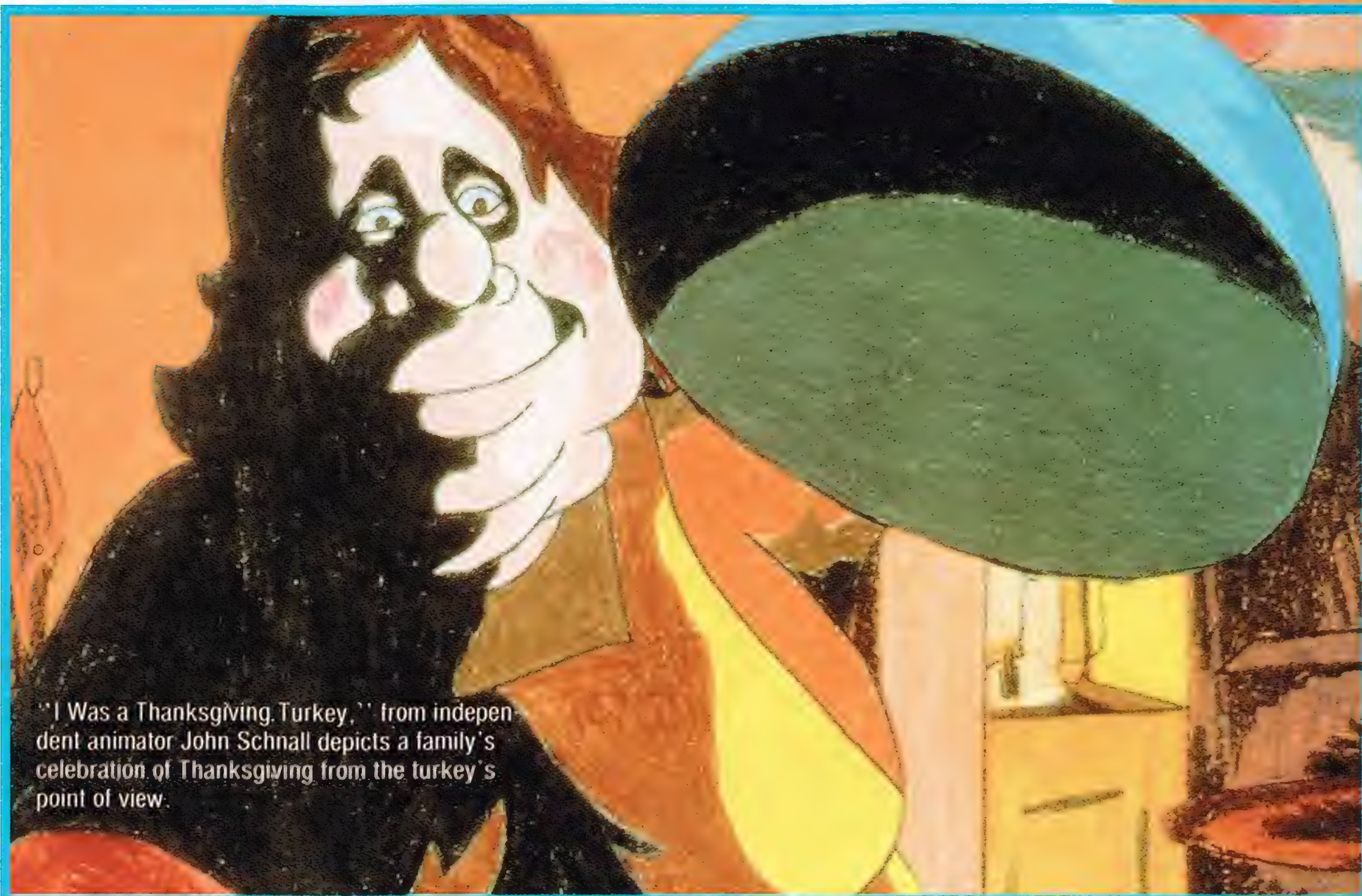
Sally Cruickshank's unique characters are featured in the preview "Quasi's Cabaret Trailer"



The Canadian Film Board's "Every Dog's Guide to Complete Home Safety" features Wally the Safety dog and his undaunted attempts to rescue his well-intentioned owners from themselves.



Bob Dog stars in "Get a Job," an animated musical comedy about the often harrowing experience of job hunting.



"I Was a Thanksgiving Turkey," from independent animator John Schnall depicts a family's celebration of Thanksgiving from the turkey's point of view.

famous Eames film "Power of Ten") and "Chromosaurus" a brief clip of chrome dinosaurs on the run.

Two highlights of the Los Angeles Animation Celebration were the British and Dutch retrospectives. The *Animation Celebration* features two popular favorites from these programs: Paul Vester's blend of surrealistic and classic animation in "Sunbeam" and another of Paul Driessen's stylistically unique fairy tales, "Oh, What a Knight."

American independent animators are showcased with films by three of the most respected names in the industry, Sally Cruickshank, George Griffin, and Jane Aaron. Aaron's "Traveling Light" is an astounding accomplishment in which hundreds of tiny pieces of paper were individually positioned frame by frame to represent the movement of sunlight passing through a window. George Griffin's "It's an O.K. Life" is an animated speculation on the quality of life of an anonymous man born in 2000—a satire of things to come. Sally Cruickshank, who recently delighted audiences with her animation for the opening credits of Disney's *Ruthless People*, presents "Quasi's Cabaret Trailer," a short teaser for a proposed feature featuring her bizarre menagerie of characters.

New Jerseyite John Schnall's "I Was a Thanksgiving Turkey" depicts a family's celebration of a traditional American Thanksgiving dinner as experienced from the turkey's point of view. This is his third film, each of which is drawn, colored,

edited and scored by Schnall, himself.

The *Animation Celebration* also includes the Canadian National Film Board's madcap portrait of a doomed domicile with "Every Dog's guide to Complete Home Safety." Les Drew scripted, animated and directed Wally the safety dog's undaunted attempts to rescue his well intentioned owners from killing themselves.

Brett Koth's award winning, "Happy Hour" pits a bear and a frog in a battle for control of a bar-room TV. A Cal Arts graduate, Koth, who has worked for Don Bluth, Filmmation and Disney Studios, is currently working as an assistant cartoonist and storyboard artist for Jim Davis (*Garfield*, *U.S. Acres*).

Richard Williams, who is currently Disney's animation supervisor in England and working on the forthcoming Spielberg/Disney production of *Who Framed Roger Rabbit?*, supplies a portfolio of three animated commercials.

The Los Angeles based Chiodo Brothers have turned their love of animation into a spectacular career. Charles was production designer, and Stephen, animation director for the stop motion feature film, *I Go Pogo*. Stephen was technical director and animator on Walt Disney Productions' "Vincent," Jackson's "Thriller" and the "Making of Thriller." Recently, they achieved new success by creating the aliens for the science fiction film "Critters."

"Second Class Mail," an Academy Award nominee by Alison Snowden, in-

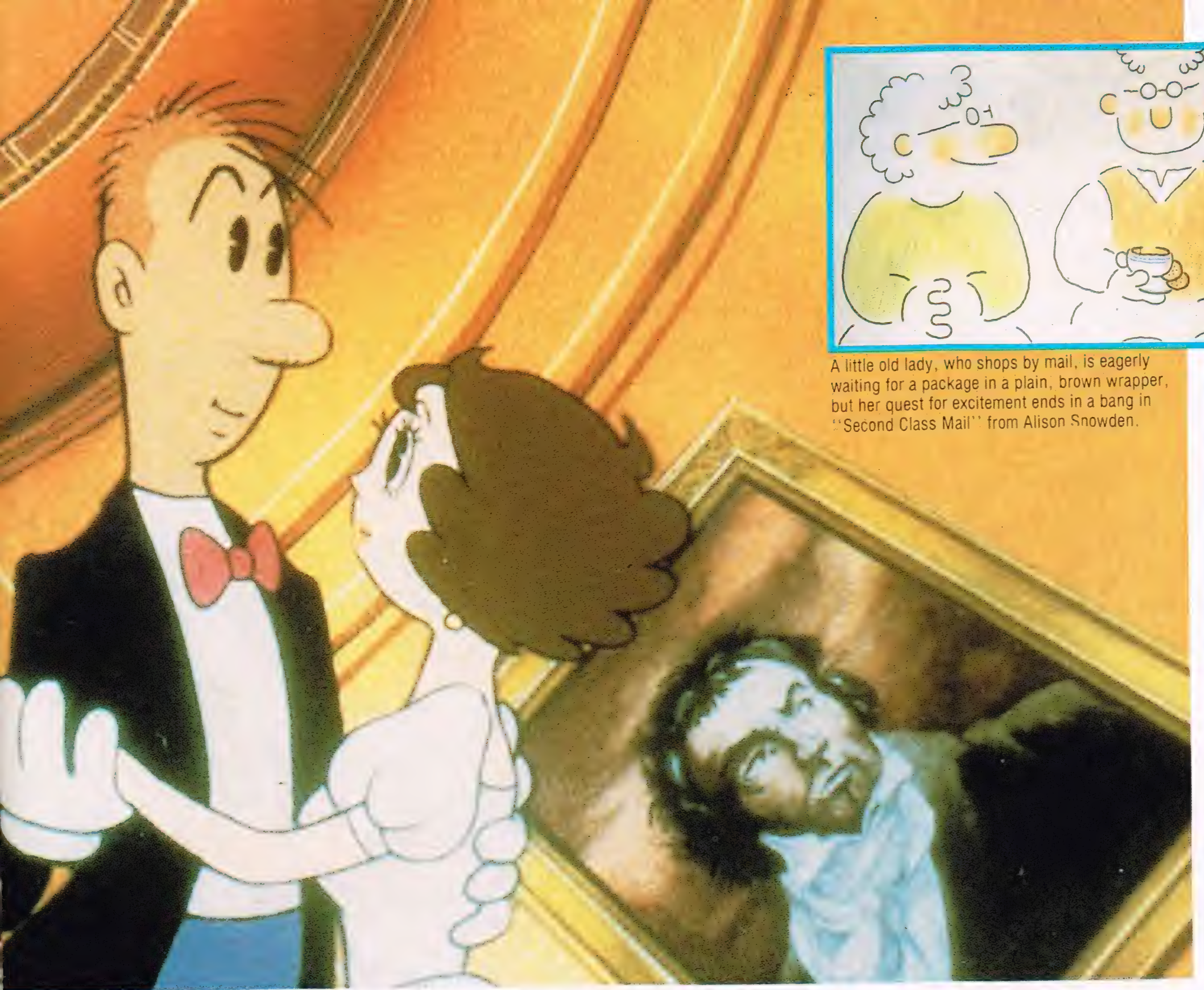
Japan's Osamu Tezuka presents "Broken Down Film"—a comedy incorporating gags from the earliest days of animation.

volves a little, old lady and the contents of a plain brown package she receives through the mail. Frosted cels were used throughout, enabling the colors to be rendered with coloring pencils.

Animation Celebration is scheduled for limited theatrical release in major U.S. cities.

At a local bar, a blue collar bear and a bar-fly frog butt heads over which TV show to watch in Brett Koth's "Happy Hour."





A little old lady, who shops by mail, is eagerly waiting for a package in a plain, brown wrapper, but her quest for excitement ends in a bang in "Second Class Mail" from Alison Snowden.

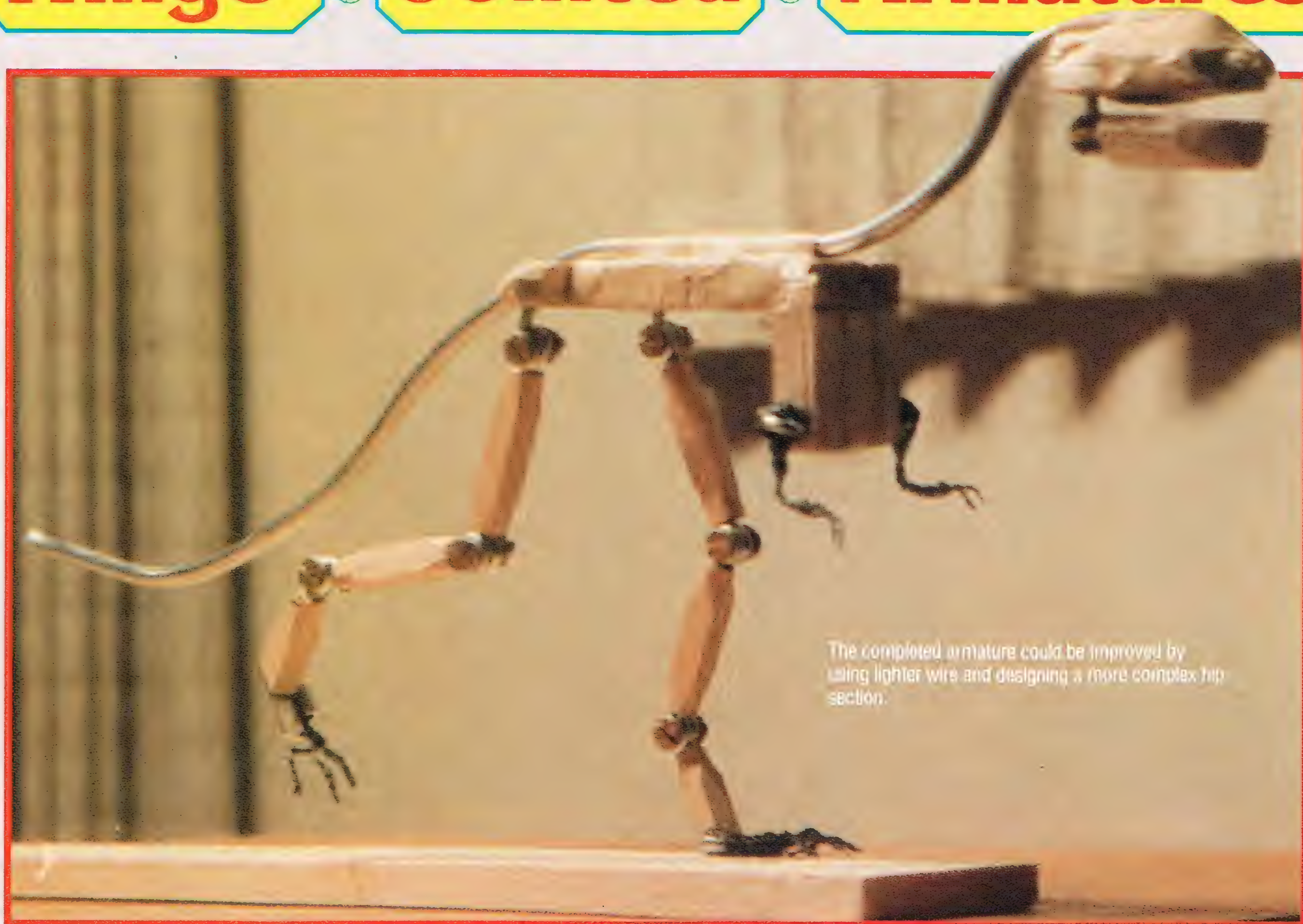
"The Adventures of Andre and Wally B." produced by Pixar represents state-of-the-art in computer-generated full classic character animation.



Stop-Motion STUDIO

By DOUGLAS BORTON

Hinge-Jointed Armatures



The completed armature could be improved by using lighter wire and designing a more complex hip section.



The materials you will need to build a hinge-jointed armature are readily available. The armature wire and Bondini-2 glue were later replaced with a lighter wire and a method of bonding the joints to the wood pieces using a combination of latex and Duro Super Glue as described in the text.

Building an armature can be the most frustrating part of stop-motion animation. Wire skeletons generally do not allow for precise enough movements; metal ball-and-socket armatures require expensive metalworking equipment and considerable expertise. What's an animator to do? You could try this simple, low-cost method of armature construction. It won't work for everything, but you may be surprised at what it can do.

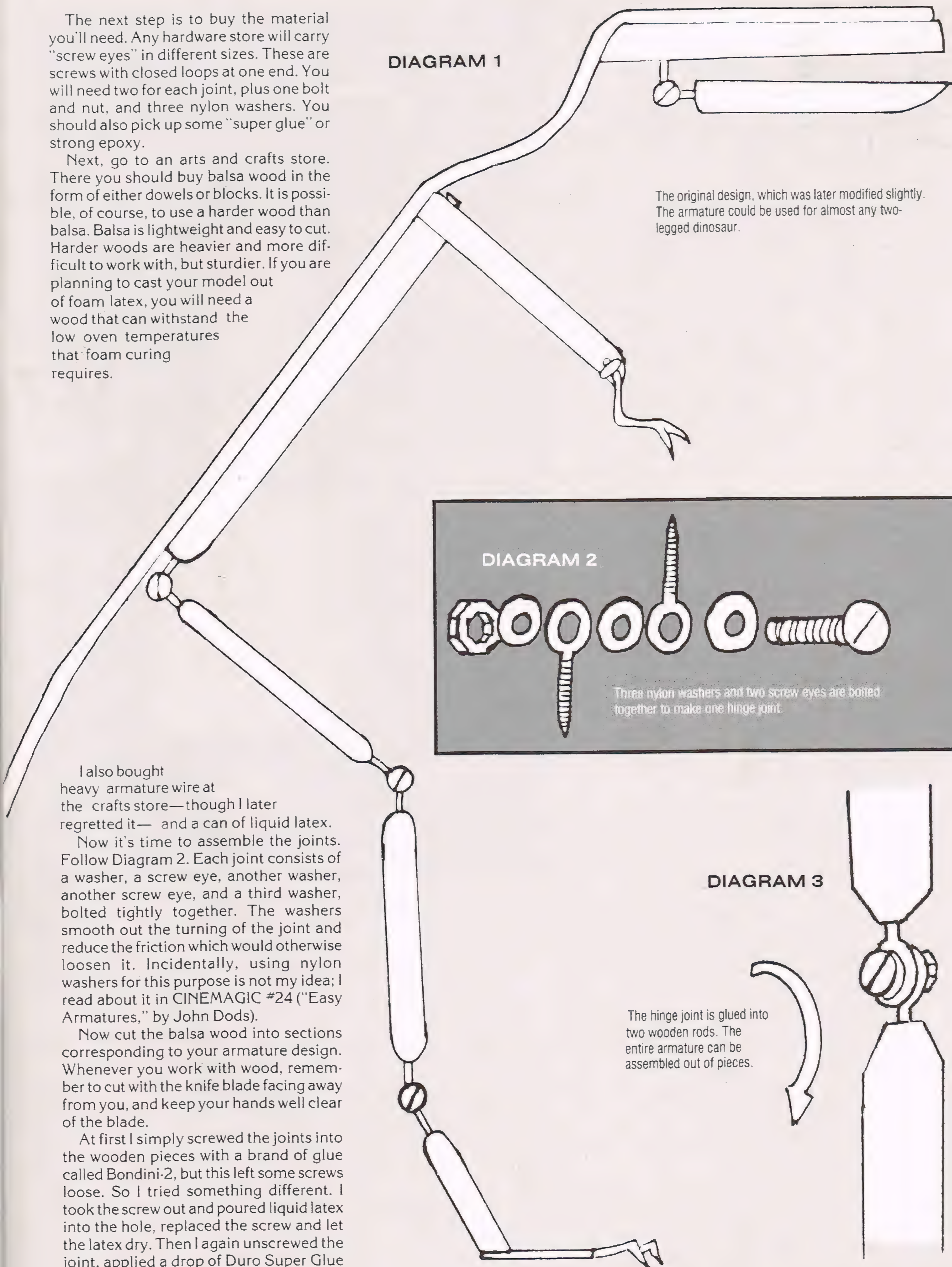
The armature makes use of hinge or swivel joints, assembled from materials available at the hardware store and linked by wooden rods. Wire can be used for the model's more flexible neck and tail. The whole thing takes only a few hours to put together and costs less than twenty dollars.

The first step is to design the armature, as shown in Diagram 1. I kept my original design as simple as possible, though ultimately it was modified a little, as I'll explain.

The next step is to buy the material you'll need. Any hardware store will carry "screw eyes" in different sizes. These are screws with closed loops at one end. You will need two for each joint, plus one bolt and nut, and three nylon washers. You should also pick up some "super glue" or strong epoxy.

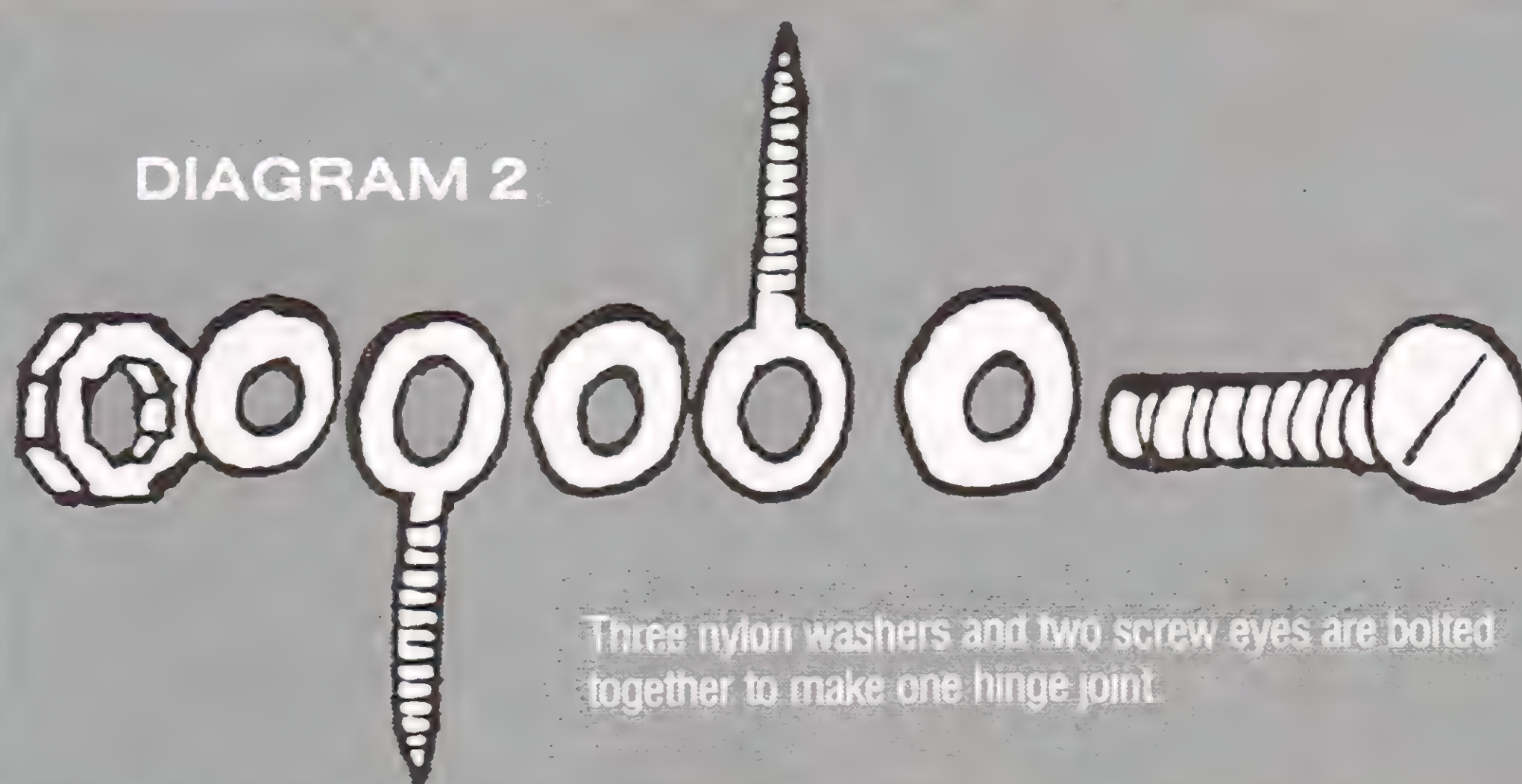
Next, go to an arts and crafts store. There you should buy balsa wood in the form of either dowels or blocks. It is possible, of course, to use a harder wood than balsa. Balsa is lightweight and easy to cut. Harder woods are heavier and more difficult to work with, but sturdier. If you are planning to cast your model out of foam latex, you will need a wood that can withstand the low oven temperatures that foam curing requires.

DIAGRAM 1



The original design, which was later modified slightly. The armature could be used for almost any two-legged dinosaur.

DIAGRAM 2



Three nylon washers and two screw eyes are bolted together to make one hinge joint.

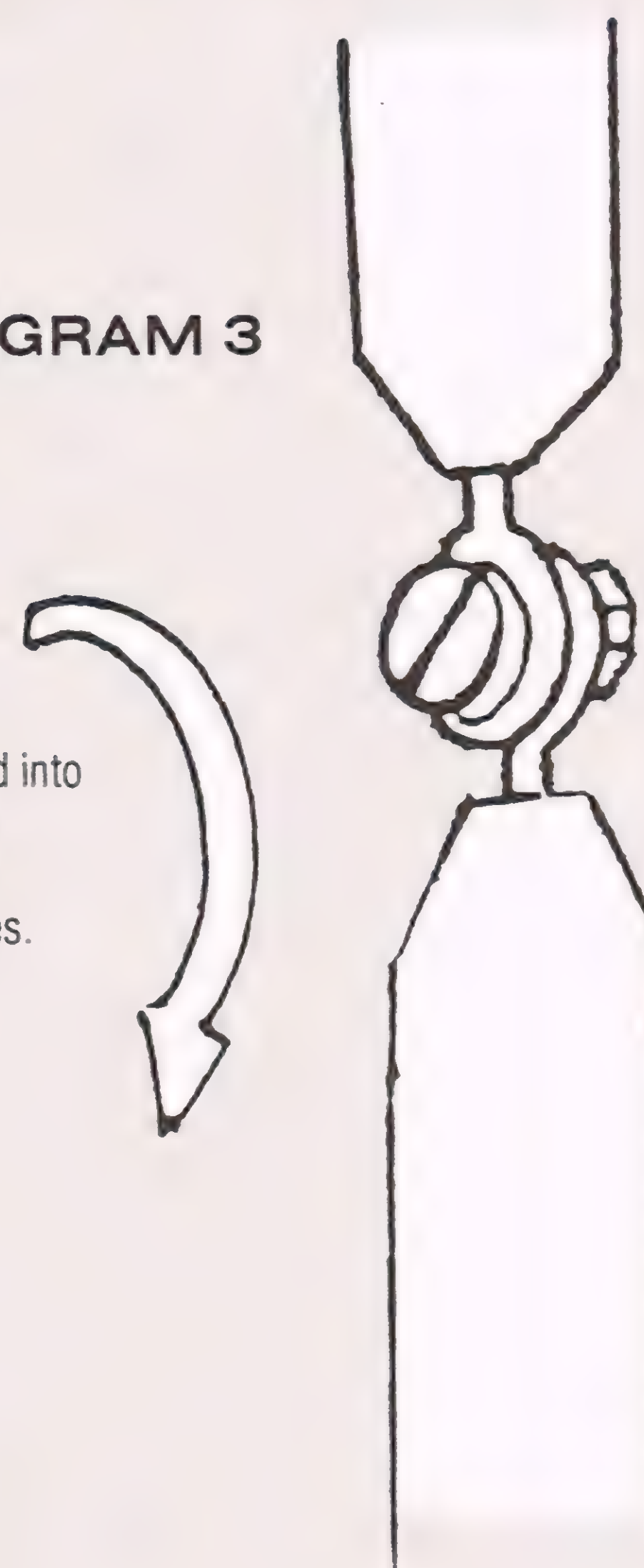
I also bought heavy armature wire at the crafts store—though I later regretted it— and a can of liquid latex.

Now it's time to assemble the joints. Follow Diagram 2. Each joint consists of a washer, a screw eye, another washer, another screw eye, and a third washer, bolted tightly together. The washers smooth out the turning of the joint and reduce the friction which would otherwise loosen it. Incidentally, using nylon washers for this purpose is not my idea; I read about it in CINEMAGIC #24 ("Easy Armatures," by John Dods).

Now cut the balsa wood into sections corresponding to your armature design. Whenever you work with wood, remember to cut with the knife blade facing away from you, and keep your hands well clear of the blade.

At first I simply screwed the joints into the wooden pieces with a brand of glue called Bondini-2, but this left some screws loose. So I tried something different. I took the screw out and poured liquid latex into the hole, replaced the screw and let the latex dry. Then I again unscrewed the joint, applied a drop of Duro Super Glue

DIAGRAM 3



The hinge joint is glued into two wooden rods. The entire armature can be assembled out of pieces.

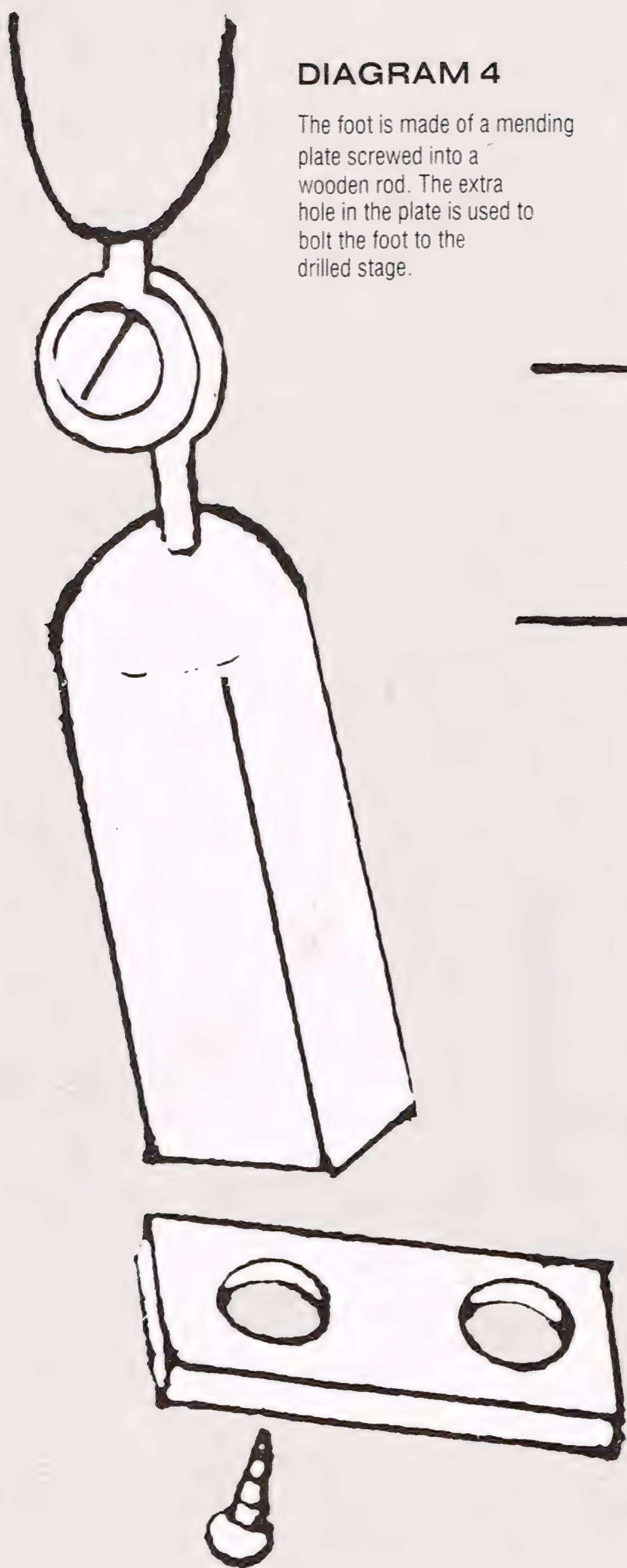


DIAGRAM 4

The foot is made of a mending plate screwed into a wooden rod. The extra hole in the plate is used to bolt the foot to the drilled stage.

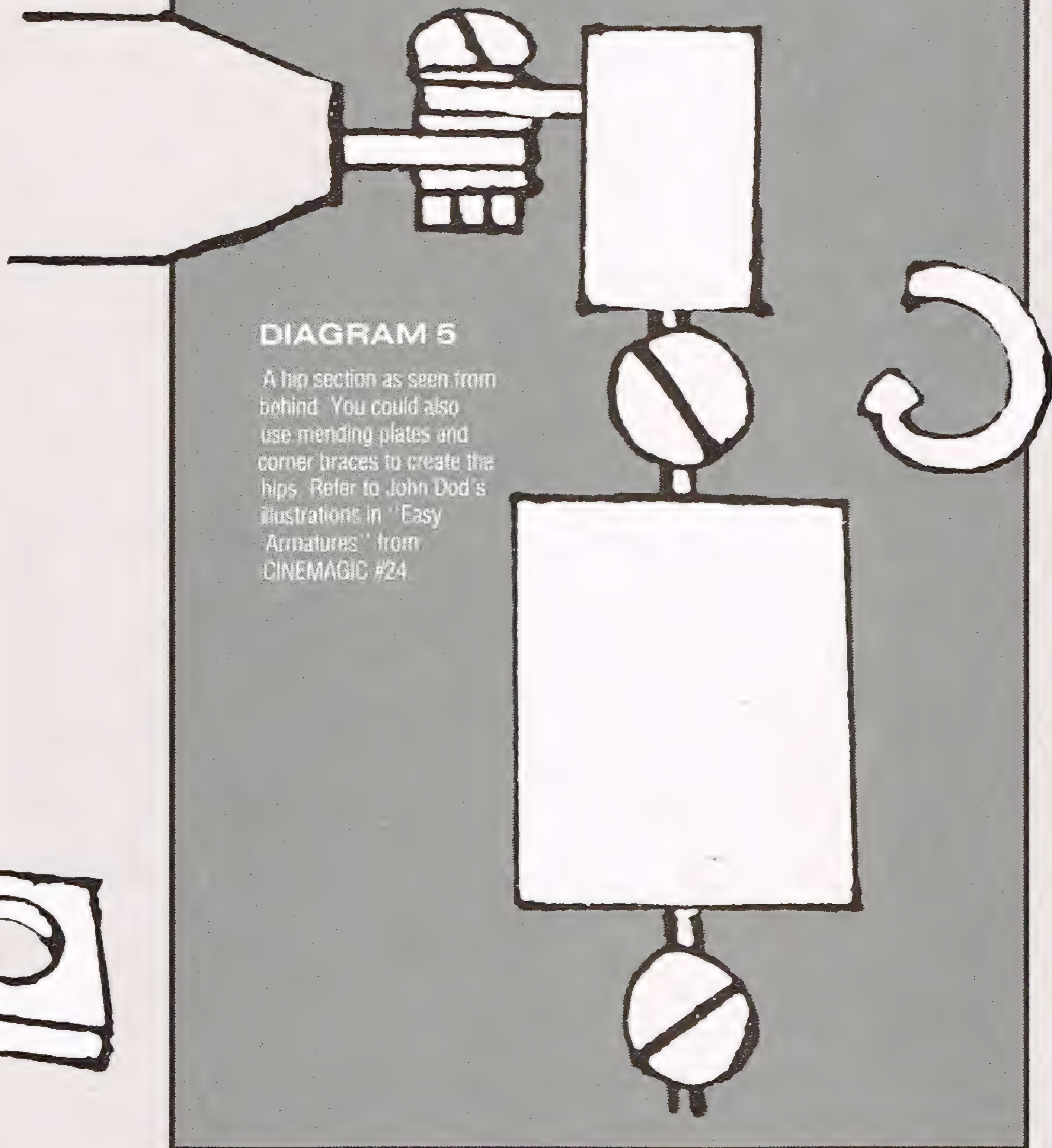


DIAGRAM 5

A hip section as seen from behind. You could also use mending plates and corner braces to create the hips. Refer to John Dod's illustrations in "Easy Armatures" from CINEMAGIC #24.

to the hole, and quickly screwed the joint back into place. The wood-to-latex-to-glue-to-steel bonding was much stronger. This extra step should not be necessary with hardwoods.

A completed joint-and-rod section is illustrated in Diagram 3. All the jointed parts of the model are assembled out of pieces like these.

The feet should be made as "tie-downs," to allow the model to be bolted to the stage. To do this, screw a small two-hole mending plate, also available at the hardware store, into the wooden leg rod, as shown in Diagram 4. I could not find a mending plate small enough, so I bought a "loose-pin" hinge instead. This is two mending plates hinged together with a removable pin. I took out the pin and used the two plates separately.

Finally, I cut the heavy armature wire to the required length and attached it to the balsa sections using thin wire and masking tape.

After testing the armature, I made two minor changes. First, I decided that the armature was a little *too* simple. The hip joints really require both forward-and-back and up-and-down motion if the model is to maintain its balance during the walk cycle. So I took apart the pelvis section and added a new joint to each side, as illustrated in Diagram 5. This more closely approximates the kind of control possible with a ball-and-socket joint.

Second, I found the heavy armature wire too difficult to manipulate, so I replaced it with 19-gauge copper wire from a hardware store. I wound this wire together in four strands for extra strength, then wired it to the balsa.

The armature yields pretty good movement. The only problem is that after repeated use the joint *will* loosen. This occurs with all animation models, even those built by professionals. You will occasionally have to slit open your latex model at strategic places and tighten the joints with a screwdriver. It is good to keep an accurate diagram of the armature to use for reference when this happens. In some cases you may be able to leave a paper-thin slit in the latex to allow easy access to the joint at all times, even during animation photography.

I'm sure that through experimentation you can come up with variations and improvements on this technique—but try not to spend too much time perfecting your armature. An armature after all, is only a tool, a means to an end; the end is the animation.

FESTIVAL NEWS

PSA Film Festival

The Video and Motion Picture Division of the Photographic Society of America announces the 1987 PSA/VMPD American International Film and Video Festival. This Competition will be the 58th Annual Festival conducted by the PSA/VMPD.

The Festival is open to competition in the following categories:

Class A. Films made with no commercial or financial objective in mind, and films which have not been subject to any prior sale or rental agreement.

Class B. Student films made by students enrolled in a school or department of

Cinematography (College level).

Class C. Commercial films, covers all films that do not qualify in Class A or Class B.

Class D. Teenage Competition for students in the 9th through 12th grades, judged separately.

Class E. Video productions produced with Video Equipment only.

All entries must be received by the Festival Chairman by May 15, 1987, the deadline date. Films and tapes will be judged in private screenings and winning entries will be shown at the PSA Annual International Convention in Long Beach, California, August 3-8, 1987.

Trophies, plaques and certificates will be awarded to the "Ten Best" and "Honorable Mention" entries.

Film and Tape entries are limited to 30 minutes and can be in 8mm, super 8mm or 16mm film gauges and Beta, VHS or 8mm tapes. Entry fee for PSA members is \$12.00 per entry, non-members, \$17.00 per entry. Class D, Teenage Competition entry fee, \$10.00. For complete rules and entry forms, write to the festival chairman: Tim W. Kinnaly, FSAC, Chairman, American International Film and Video Festival, 6618 Parkside Drive, Tinley Park, Illinois, 60477, U.S.A.

SFS Winners

The 1986 CINEMAGIC Short Film Search held its annual screening and awards presentation in conjunction with the 1986 Thanksgiving Weekend Creation Convention, held at the Omni Park Central Hotel in New York City. On hand to make the presentations was actor Robert Lansing, who handed out trophies and greeted the award winning filmmakers after the screening.

The winners in the 16mm category were: the First Prize award went to Laurie Kennard from Chicago, IL with "The Room in the Tower;" Second Prize went to John De Simone of Brooklyn, NY with "To See the Invisible Man," an adaptation of a Robert Silverberg short

story; Third Prize was awarded to William R. Pace of Brooklyn, NY with "Echo Canyon."

Though no trophy or other recognition is given, the judges singled out a number of 16mm films as Honorable Mentions: from Hawthorne, NJ, Gregory Perler's "The Miracle Seed," from Chatsworth, CA, Jeff Klein's "Aquaman—The Cast of the Angler," from New Brunswick, NJ, "A Christmas Treat" by Timothy Michael Sullivan and "Possession" by Christopher Orville of Brooklyn, NY.

The top Video award went to "The Modern Library" by George Spyros of New York, NY. Two Honorable Mentions were selected: "Black Noise" by Nicholas C. Gorski of San Francisco, CA

and "Deathly Realities" by S. Torriano Berry of Los Angeles, CA.

The top award in the Super-8 category went to Tom Triman of Anaheim, CA for his stop-motion fantasy "A Spark of Being." Second Prize was awarded to Michael K. Jackson of Union City, CA for "God of His Own Universe." Third Prize went to Kevin M. Proulx of Los Angeles, CA for "All That Glitters."

Only one Honorable Mention was singled out by the judges in the Super-8 category and that went to Dan Frazier of Los Angeles, CA for "We Are Enchanted."

The CINEMAGIC 1987 Short Film Search is in the planning stages now. Entry forms and information will be available by June 1.

Starlog Festival

Ray Harryhausen has been scheduled as the headline guest for this year's STARLOG Festival to be held in New York City on May 9 and 10. Long noted for his stop-motion special effects artistry in such films as *Mighty Joe Young*, *Jason and the Argonauts* and *Mysterious Island* among others, Harryhausen will be on hand to answer specific questions from the audience

during his presentations. *Clash of the Titans* and *Jason and the Argonauts* will be screened and a number of his miniature creatures will be on display.

Other guests include: George Takei from *Star Trek*; TV's Batman, Adam West; Paul Darrow of *Blake's Seven*, and legendary SF author Isaac Asimov.

The Official 1987 STARLOG Festival will be held at Manhattan's Penta Hotel (33rd St. and 7th Avenue) on May 9 and 10. The Festival will be open from

11AM to 7PM daily, Saturday and Sunday. Tickets are on sale at Ticketron locations for \$12.00 daily, or send fees to Official Starlog Festival, 249-04 Hillside Avenue, Bellerose, New York 11426, and your tickets will be mailed to you. Tickets will be sold at the door for \$15.00 daily. Special lower than normal hotel room rates are available at The Penta Hotel for those attending the Festival. Call (718) 343-0202 for details.

Star Wars Salute

A tenth anniversary tribute to George Lucas is the theme of STARLOG Salutes Star Wars, a unique Festival scheduled for May 23, 24, 25 (Memorial Day weekend). *Star Wars* creator George Lucas will be on hand—making his first convention appearance ever. Celebrating the event will be guests from both sides of the camera during the making of the *Star Wars* trilogy. Special guests and Imagineers from the Walt Disney Studios will present unique programs spotlighting Star Tours—the newest and

most fantastic attraction in Tomorrowland. Meet the creative wizards from Industrial Light and Magic, who will describe the basic techniques of special effects artistry, including design, storyboards, miniatures, creature animation and motion-control photography.

In addition, many rare exhibits will be on display including a selection of the magnificent props, models and original art from the Lucasfilm archives. Representatives from Rockwell International will present a program updating plans for the Space Shuttle and Space Station.

STARLOG Salutes Star Wars will be presented at the new Stouffer Concourse Hotel, 5400 W. Century Blvd., Los Angeles. For room reservations and/or ticket information write: Creation/Star Wars, 249-04 Hillside Avenue, Bellerose, NY 11426. Tickets will be \$15.50 per day (advance sale) or \$18 per day at the door; a special advance weekend price is \$40, which includes full admission for all three days. Tickets are also available at Ticketron locations, and at specialty science fiction, comics and book stores in the U.S.A. This event is produced in association with Lucasfilm, Ltd.

INTO THE THIRD DIMENSION WITH CAPTAIN



Disney's FX pioneers break the silver screen barrier in a new 3-D, multi-media interactive featurette.

By DAVID
HUTCHISON

Michael Jackson plays Captain EO in the new 70mm, 3-D space-fantasy featurette that co-stars Anjelica (*Prizzi's Honor*) Huston, Dick (*The Producer's*) Shawn and an assortment of Disney-created musical instrument characters. *Captain EO* can be seen at only two theaters in the world: in the Imagination Pavilion at the Florida EPCOT park and in Tomorrowland at the Anaheim Disneyland in California.



The film opens with a laser and explosion filled space chase. Captain EO soon finds himself skimming the surface (a la the trench sequence in *Star Wars*) of a trash strewn, colorless planet inhabited by a collection of suitably grim black-and-white nasties. They are confronted by the Supreme Leader (Houston), who hangs batlike from the ceiling and looks like a Gigeresque version of the Wicked Witch of the West. Captain EO and his crew defeat the forces of darkness using the power of music, dance and light to transform the evil denizens into a magical world of color and happiness. Animation buffs will appreciate the similarity of concept to the old Van Buren animated short "The Sunshine Makers"—a cult classic.

Featured are two new Michael Jackson songs with choreography by Jeffrey Hornaday and incidental music by James Horner.

Directed by Francis Coppola and produced by George Lucas, *Captain EO* marks a significant departure for new attractions at Disneyland and the Magic Kingdom at Walt Disney World. Traditionally, the park rides are themed around Disney subjects and rely on audio-animatronic figures rather than film to tell the story. Watching movies, with the exception of Tomorrowland's Circarama theater, hasn't been part of the Disneyland experience.

Director Francis Ford Coppola, star Michael Jackson and producer George Lucas were the production team leaders for *Captain EO*.

It was only the unprecedented success of EPCOT's 70mm, 3-D presentation of *Magic Journeys*, which, since its opening in 1982, has played to more than 19 million guests, that led to the decision to make a 3-D film for Tomorrowland. During the past two summers, park officials test screened *Magic Journeys* (directed by Academy Award winner Murray Lerner) at the Anaheim park. The response was overwhelmingly enthusiastic.

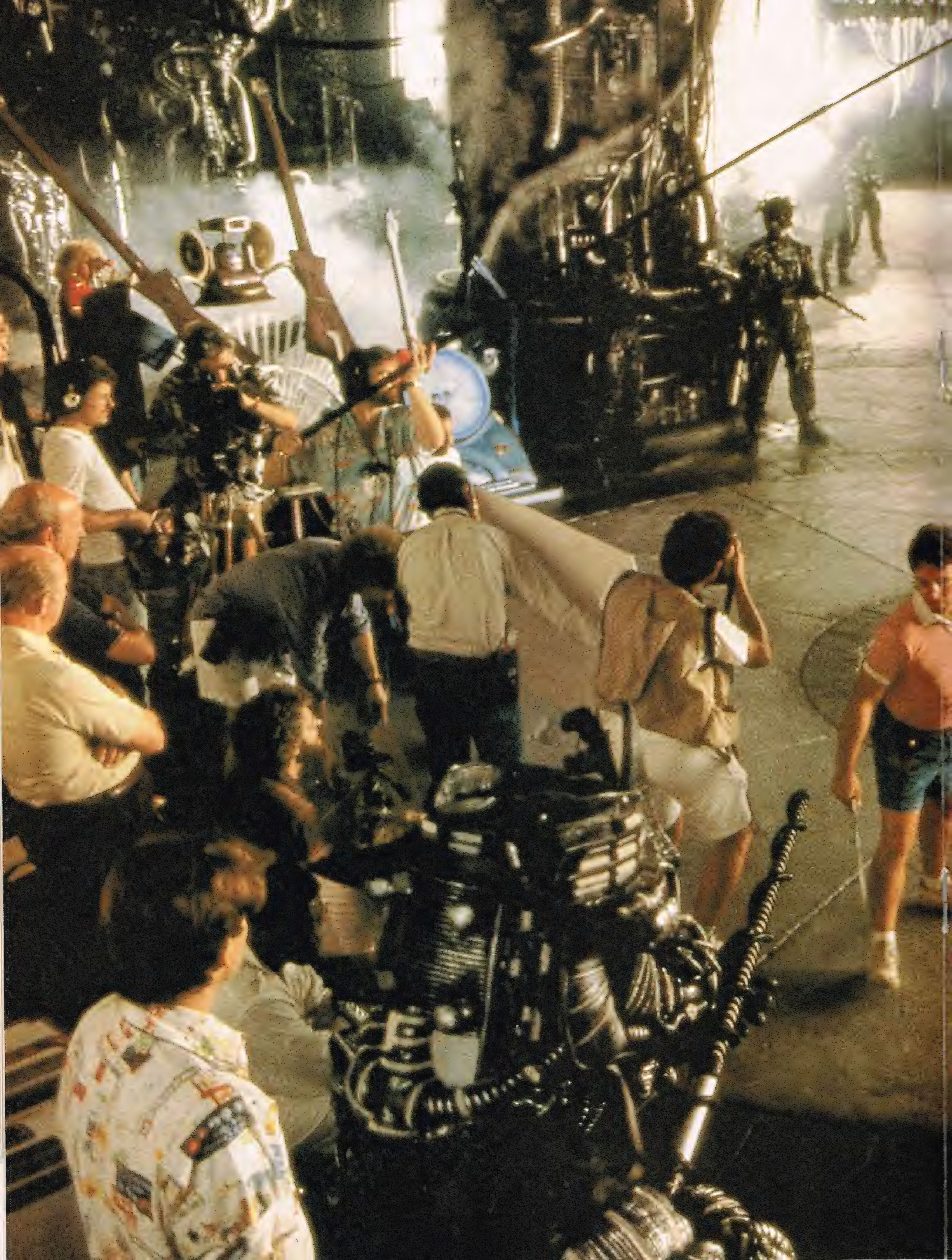
The audience reactions to the 3-D presentation of *Magic Journeys* were just as startling as they had been at EPCOT. One of Walt Disney's stated purposes for EPCOT was to be an Experimental Prototype Community of Tomorrow in which new ideas, technologies and systems could be tested in an actual working en-



Black and white makeup is applied to one of the dancers. Normally, such high contrast situations are a no-no for 3-D, but the basic concept of the film was to transform a world of black and white into one of color.



For a few sequences, a Canadian 3-D camera system was borrowed, which utilizes twin Super Panavision 65mm cameras on a horizontal bed.





The very dark *Captain EO* set required high levels of illumination so that the camera could shoot at a small lens opening for maximum depth of field. Adding to the problem, was the 3-D camera's half-silvered mirror, which soaked up an additional stop-and-a-half of light.



Hooter and the Geex are just two of the musically prodigious aliens created for *Captain EO*.

vironment. Within EPCOT are Future World and World Showcase with pavilions that utilize perhaps a dozen or so different film presentations in nearly as many systems and formats. In terms of an immediate and enthusiastic audience response, Murray Lerner's 3-D *Magic Journeys* has them all beat. While the other formats—everything from triple-panel 70mm to full CircleVision—visibly impressed or awed audiences, *Magic Journeys* had viewers directly involved—very dramatically and very visibly. No complicated audience testing systems are necessary at EPCOT in order to measure the audience reactions to 3-D and *Magic Journeys*; just watch the audience as they respond to the film—the difference is astounding.

Disney's CEO Michael Eisner was well aware of what was happening with *Magic Journeys* in EPCOT and he wanted to bring the high-impact experience of *Magic Journeys* to Disneyland. As it happened, Eisner had been in talks with George Lucas to involve him in some way with the parks.

"I've always loved Disneyland," Lucas admits. "I was there the second day it opened and I used to go once a year. Well, I was working on some projects at WDI [the branch of the Disney organization responsible for the master-planning, show development, design and engineering for the Disney theme parks]. We were working on Star Tours and a few other projects and they asked me if I would be interested in working on a 3-D movie with Michael Jackson. They showed me some idea proposals that they had worked up and we discussed that for a little bit. I gravitated toward the more outer space-oriented adventure and that was the initial spark that set the whole thing off."

Packaging the Concept

The developmental process for *Captain EO* was very collaborative. As new members of the production team were added, they brought their own ideas about

what *Captain EO* should be about. The storylines were developed by Walt Disney Imagineering (WDI) show designers Rick Rothschild, Richard Vaughn, Tim Kirk and Joe Rohde. Special effects designer Chris Runco was added to the team in further brainstorming sessions at WDI with the film's principals. "These sessions resulted in concepts for the characters who people the film," explains Rothschild, "among them: Fuzzball, Hooter, the Geex, Major and Minor Domo. We reworked these initial concepts with Francis Coppola after he came onto the project."

While Jackson was working on his music, choreographer Jeffrey Hornaday began working with Lucas and Coppola to integrate the music and dance into the story. Rather than trying to specifically choreograph Jackson's dances, Hornaday used the entertainer's personal mix of jazz and street dancing to create a futuristic look. Hornaday, who has choreographed *Flashdance* and *A Chorus Line—The Movie*, has worked with Jackson prior to *Captain EO* on the "Say, Say, Say" video with Paul McCartney.

"I had Michael dance improvisationally to the music," Hornaday explains, "and then try to expand it into something 40 dancers could do."

Additional members of the production team included John Napier (production designer for Broadway's *Cats* and *Starlight Express*), handpicked by Lucas, to act as costume designer. Napier worked with Disney show designer Rick Rothschild and the WDI special FX team to develop the concept for extending the 3-D film experience into the theater with live special effects.

Others working closely with the development of *EO* were the film's art director Jeffrey Kirkland and Coppola's cinematographer Vittorio Storaro (*Apocalypse Now*, *Reds*), who supervised the live action 3-D photography, which was to be shot with Disney's unique twin 65mm cameras. An Oscar winning cinematographer, this was Storaro's first experience with 3-D.

"This was the *first* time I have seen 3-D in my life," he says. "It is really wonderful. Since the story is about the energy people have within themselves and can send to others, the 3-D gave us an incredible chance to relate movement through sound, light and color into all the wavelengths of life."

With the cast and crew finally assembled, only one group remained to be gathered before lensing could begin: of course, the creatures.

Created by the Disney designers, the creatures are also musical instruments. There is Hooter, the little green elephant who sneezes wild music notes through his flute-like trunk; Fuzzball, the orange-haired space-monkey with butterfly wings, who sings with a light soprano; the Geex, a gold-furred, two-faced personality with two left feet, one right foot and two shaggy heads named Idy and Ody; Major Domo, whose mirrored silver costume becomes a complete set of drums, traps and string bass played by Fuzzball, and Minor Domo with his sparkling purple torso that turns into an electronic synthesizer played by Hooter.

The original concepts for the creatures were turned over to WDI designers, who made numerous drawings. "From these," says Lance Anderson, one of the project's principal creature builders, "we did renderings until we felt each creature had character. A lot of character."

Perhaps the most appealing character is Fuzzball. Built and operated by Rick Baker and his team of special FX makeup artists, much of Fuzzball's charm and highly detailed personality was created by the Baker team. Built to operate both as a hand puppet, cable-controlled puppet and flying creature, little Fuzzball steals almost every scene he has.

Baker credits Tom Hester with the majority of the work on the hand puppet version of Fuzzball, while the radio-controlled Fuzzball, which is seen attached to Jackson's shoulder was built by Al Coulter. Baker and his crew created Fuzzball from a sketch that was supplied by the artists at WDI.

"Their original sketch was pretty vague," says Baker. "First, we created a maquette of the character complete with hair to see what he looked like in three dimensions. Early on there was another character called Flutter—a little flying butterfly-winged fairy. But it was decided to combine both of them into the Fuzzball character. So as soon as we finished the maquette we were told that it would have to fly, so we put wings on it which are operated by cable-controlled mechanism.

"We originally had Fuzzball's fur a much more organic color, an ochery-brown. It was Vittorio Storaro who had the brilliant idea to make the characters all the colors of the rainbow. So after we built the body, added the hair and the wings, we had to paint him red."

With the script, cast and characters in place, actual shooting started July 1985. The actual live action work was scheduled for two weeks before the cameras, or rather, camera, since the 3-D camera to be used was the unique Disney twin 65mm system that had been designed and built for *Magic Journeys*.

The basic camera system utilizes the movements and bodies from a pair of extensively modified Mitchell FC's with WDI designed lens mounts and motor drives. The twin cameras are mounted in a unique vertical L-configuration with one camera pointing straight down into a 45-degree half-silvered mirror and the other looking straight out through the mirror. This arrangement permits the use of a fairly wide angle lens with a smaller than usual mirror.

The system allows for variable in-

terocular settings from 0-4 inches (see CINEMAGIC #33 for a discussion of 3-D terminology and technique). The interocular setting can be changed, while the camera is running without disturbing the convergence. Lens openings and focus are motorized with remote controls. The camera motor can handle anything from slow time lapse to 72 frames per second. Viewing is reflex with a video monitor tap. Lenses are precisely matched Zeiss Hasselblad ranging from 40mm to 150mm.

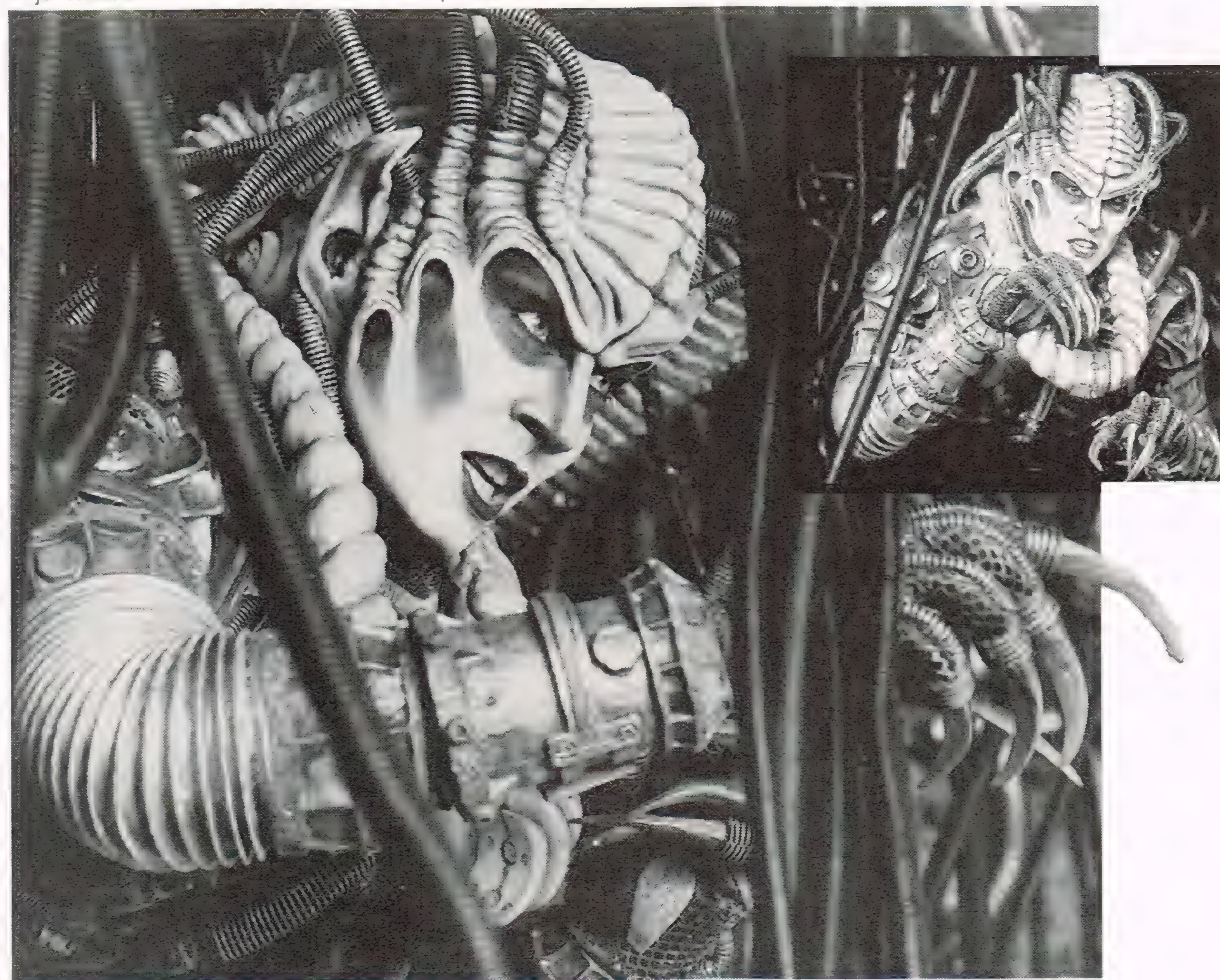
The cameras are synced electronically with one camera operated as a digitally controlled master and the other slaved to it with shutter-to-shutter accuracy. Good 3-D photography requires not only that the cameras remain locked to precisely the same frame rate, but also for the shutters to be opening and closing at precisely the same times. Any error in the shutter opening times will cause an annoying "shimmer" of objects in rapid action and in extreme cases of sync failure for 3-D illusion to be completely lost or appear reversed.

The Disney vertical L-configuration has the advantages of being relatively compact, good mirror stability, and ability to handle wide angle lenses. The trade-off is that camera shooting off the mirror records its images upside down, which must be inverted in an optical printer even to view dailies.

A Different Medium

Making a 3-D film is, at least, two or three times more complicated than making a normal movie. A 3-D film is not just a

Anjelica Huston is the dark and terrible Supreme Leader, who confronts Captain EO.



movie with the illusion of depth, it's an entirely different medium. Shooting in 3-D is a more radical change than converting from silent to sound. It absolutely, critically involves *every* phase of production design, scripting, camera work, and post production editing and effects. As a medium, 3-D must be thoroughly understood technically and aesthetically. The film must be designed for it.

Beyond the artistic considerations, even the physical problems are daunting. The camera rig is very large and bulky—weighing four or five times what a normal camera would. Sets must be brightly lit, requiring very high illumination levels.

The basic rules of setting up shots are different in 3-D—rules of cutting, camera movement and frame-line, among others. In essence, 3-D is really just an optical illusion, any error, mechanical or otherwise, made during the film's production can destroy that illusion.

Eric Brevig, who had been hired as an assistant cameraman during the production of *Magic Journeys*, was brought aboard as *Captain EO's* 3-D consultant. "Magic Journeys was difficult," Brevig asserts, "but it was *nothing* compared to *EO*." Since Brevig was one of the few people on the production team with *any* first-

hand 3-D experience, he soon found himself walking a thin line between what the 3-D cameras would allow and what the filmmakers wanted to do.

"There were a lot of very big names on *EO* and they all had opinions as to what had to happen. So, one had to be responsive to their needs and requests, as well as to be firm when you really felt that something needed to be done in a certain way. It all worked out, though. Because of the production's magnitude, it was decided that they would shoot it the way they felt they wanted to for dramatic reasons; unlike *Magic Journeys*, in which every shot was composed for 3-D."

There was only one big disaster during the live-action filming. Inadvertently, the Selsyn motors controlling the precise synchronization of the twin 65mm cameras were attached 180 degrees out of phase.

"I hit the ceiling when I saw the footage," Brevig admits, "because we were getting dailies three days after they were being shot, which meant that three days worth of stuff had been shot that way." In the finished film, there are perhaps only about half-a-dozen shots with the bad footage. Most people probably won't be aware of it.

The real production headaches would come in post production. *Captain EO* incorporates more than 150 special effects shots—as much or more work than many SF films. Modern special FX work is very demanding and exacting work, but producing effects in 3-D complicates the task enormously. In 3-D, special effects must be produced with absolute micrometer precision. When *Captain EO* is projected on a giant 54 x 24 foot silver screen, each

frame of the film is magnified 343 times. In order to place objects and effects precisely in depth, images must be composited with near perfect accuracy—within three ten-thousandths of an inch. The Late Art Cruickshank had supervised the extraordinarily complicated optical effects of *Magic Journeys* through to perfection; for *Captain EO*, the producers turned to Disney effects veteran Harrison Ellenshaw.

Ellenshaw was asked to submit an effects budget for 60 shots in what was planned to be a 10-or-12 minute show. "I submitted my budget to Disney, but they said, 'No, too much money. Cut it in half.' We cut it in half. I said, 'I don't mind cutting it in half, and here it is. Now, you realize that buys you far less shots. Instead of doing 60 shots, we will be very fortunate to do 40 shots for this show.' They said, 'Forty shots? No problem! That's a lot of shots for a ten minute film.'"

"Of course," Ellenshaw continues, "it ended up being a 17-minute show with 325 cuts—150 cuts for FX shots. And then, somebody asked *why* we went over budget! I think we probably spent four times what my original budget was, but we got four times the shots."

The effects sequences include motion control spaceship shots, matte paintings, blue screen, high-speed explosions, clay animation and stop-motion animation, all enhanced with highly detailed hand-drawn animation effects.

"In the film," Ellenshaw explains "when Michael zaps Anjelica Huston and her band of nasties, we didn't want it to be just the same old red laser lines coming off his hand. Animation supervisor Barry Cook



Francis Ford Coppola, Anjelica Huston and George Lucas are on hand for the opening day ribboncutting ceremonies.

came up with some very interesting designs. The rays had a detailed core and white circles that travelled down it. In 3-D, the animation would have a definite shape, show direction and have a little definition to it."

Designing it was one thing, animating it in 3-D was another. Not only was the ray itself multi-layered, but the animators had to add interactive light effects on bodies and faces. Some effects had a dozen or more layers of animation (seven or less is the usual).

"You know, 3-D animation is *not* just a matter of doing it once for the right eye view and shifting it over for the left eye," Ellenshaw emphasizes. I have the greatest admiration for these people. It wasn't easy. I sat there and watched them with their little grids. They would do one eye, and then they had to figure out their perspective grids and new vanishing points. It was phenomenal! I know this sounds corny, but one of the most exciting days for us was the first day we saw a pencil test of the animation...and it was in 3-D. *Captain EO* was every bit as complex as *TRON*."

Most of the effects shots in *Captain EO* required some kind of animation FX enhancement. For each of these scenes, animators Ed Coffey, Peggy Collen, Barry Cook, Mike Lessa, and Scott Santoro began by making tracings of the left and right eye views of the photo-rotos that were created for each scene. When these tracings were laid one over the other, the plane of convergence could be determined as well as the near and far planes.

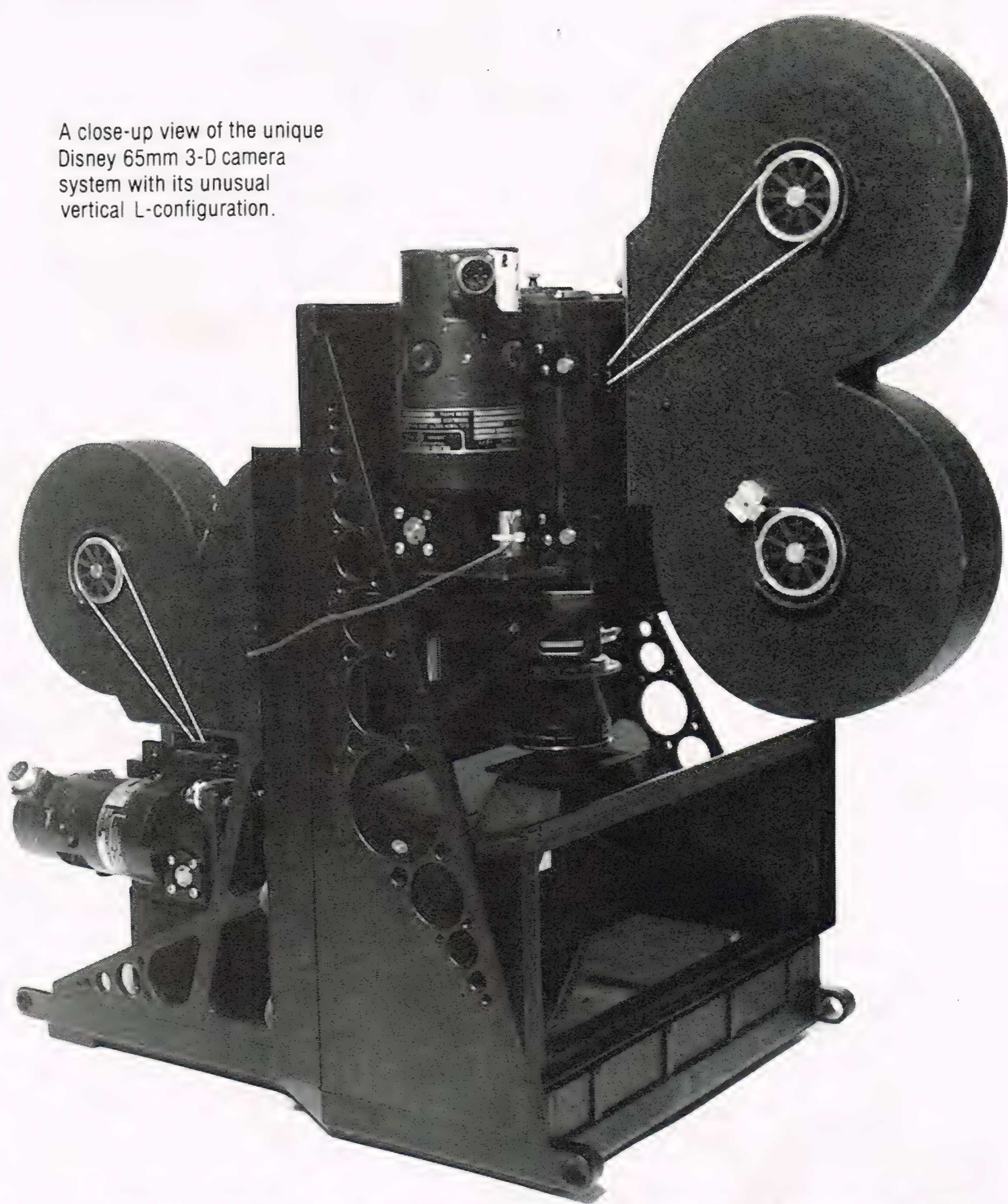
Glow, twinkles, rays and other interactive light effects could be accurately placed in space by using the tracings as a guide for parallax separation. Where planes of action converged, action appeared at the surface of the screen. Effects could be placed behind and in front of the screen by gauging the amount of parallax in the tracings.

Animators work in pencil, flipping three or four sheets of paper at a time over a photo-roto of the scene being enhanced. These drawings are inked with blackfelt tip markers and photographed to create high contrast mattes, which are used to print the effects into the scene. Animation FX in *Captain EO* are extraordinarily detailed with as many as a dozen levels of animation for any given effect. The number of levels is determined by the complexity of the effect.

Time Enough for 3-D

Much of what was attempted for *EO* was either radically new or incredibly complicated. Much more so than had been foreseen. Six or seven months into post-production, Ellenshaw became aware that they were not going to make their schedule. "I would argue that the schedule was unrealistic, but... It's the first time I've been associated with a firm that went over schedule. The blessing was, there were only two theaters, not 1200.

A close-up view of the unique Disney 65mm 3-D camera system with its unusual vertical L-configuration.



"It was early in January 1986 that I told George Lucas. George saw a rough cut, walked into my office and said, 'Well, Harrison. You gonna make it?' This was when we were contemplating an Easter release. And I swallowed hard, and gripped the side of my chair and said, 'No, George, we're not going to make it.' That was one of the tougher things I had to do that day.

"I wanted so desperately to lie, and say, 'Yes, we're gonna make it; I'm fine.' And then go back and become a religious fanatic and hope that it would get done. But, I knew I had to tell him. I did. He wasn't happy. I didn't try to make excuses. I described our situation. He realized we were in trouble and that was when he sent Tom Smith [the former General Manager of ILM, down. It was probably the best thing that could have happened. All at once, there was another voice backing me up, stating the reality of the situation. He was able to lighten the load a little by arranging for ILM to do some motion control model shots for us." ILM did 16 motion control shots and some VistaVision composites for the film.

The models for the space chase sequence, which opens *Captain EO*, were designed by Joe Johnston and shot at ILM in VistaVision. The starfield backgrounds were filmed by Dream Quest in Los Angeles. The space explosions were shot

by Harrison Ellenshaw's crew in Super Techniscope. Other sequences were composited in Technirama, to ease some of the back-up on the 65mm printer. "We ended up having to juggle four different film formats. The Technicolor film lab ended up making a lot of elements for the show. They have the ability to go from 65mm to Technirama, Technirama to 65mm, Technirama to VistaVision. They can mix and match."

The Disney optical department owns a 65mm printer, which was acquired during *Magic Journeys*. This printer was kept busy printing dailies from the production footage.

"They also brought Eric Brevig back," Ellenshaw continues. "Eric took a great load off our backs. He could look at the dailies, worry about the 3-D, figure out what was wrong and suggest a way to fix it."

Some problems were easy to fix: left and right eye views would be reversed in one element or a shot would be misconverged. Brevig ordered black and white pre-comps on opticals just to check if the 3-D was OK. Other problems were more complicated.

"There were some close-ups of Michael or one of the characters that would be converged too far off the screen to be comfortably viewable. So, the shots would have

to be optically re-converged before the animation effects were added. We did it all on large format photo-rotos like the ones we used on *TRON*, so it was very easy. I would just make new punches in the paper, and that would be the guide for convergence for the animators.

"One of the real problems was that because the theater had not yet been built we had to screen the dailies on a screen one-third the size. We had to work on blind faith that the shot would have the right amount of depth when the image was projected three times bigger in the Magic Eye theater. But we got pretty good at making those judgements. I didn't see the film on the 60-foot screen until it was in an answer print state, by then it's too late to change anything. So, there had been crossed fingers for many months."

The Claymation sequence was suggested by Walter (*Return to Oz*) Murch who was editing the film. George was intrigued by the idea. So Will Vinton's company was hired to handle two metamorphosing effects: the transformation of EO's small robot friend, Minor Domo, into a music synthesizer, and a row of ultra-high tech pillars into Grecian columns. Doug Aberle, who headed the Vinton crew, spent four months working on seven separate shots. A section of the *EO* sets

The opening day mobs at Disneyland's new Tomorrowland attraction surprised the Disney officials.



was reproduced to scale at Vinton's Portland, Oregon studio.

Sometimes, a transformation scene was shot in reverse to simplify the animation process. The crew used a computer-activated, single-camera system moving back and forth on a long track. This allowed each frame to be shot twice, once from the left eye point-of-view and once for the right, thus achieving a 3-D effect. Footage was then sent to WDI, where Harrison Ellenshaw's crew enhanced the footage with animation effects. Assisting Aberle were set designer Joan Gratz; Gary McRobert, designer of the 3-D rig; and technical assistant Charlie Rehwalt.

It is not unusual for animation FX artists to be called in to save an FX shot that is not quite working by adding a little flash and glitz to distract the audience. *Captain EO* was no exception. Near the end of the film, EO transforms Anjelica Huston's captured minions into happy humans. This is achieved by stopping the camera during a shot, replacing the actors playing the bad guys with actors playing the good guys and restarting the camera. On the screen it looks as though an instantaneous transformation has taken place. The technique, which dates back to Melies and is called an *arret*, requires the actors to hit their marks very precisely. Unfortunately, this was not the case on *EO*, so the effects animators had to add quite a bit of flash and dazzle to make it work.

Second That Stop-Motion

Full scale stop-motion was used by Ellenshaw's FX artists to transform Major Domo into a set of high-tech drums. Animation effects supervisor Barry Cook and animator Ed Coffey borrowed one of the black-and-white video cameras used to record pencil tests, and shot rough tests of what would be needed. "It looked pretty good," remembers Ellenshaw. "They set up shop in Universal's old Hartland facility, which is right across the way from where we were ensconced at WED Tujunga—right in the armpit of the Valley. Steve Slocumb was the cameraman.

"Again, there were budgetary constraints. We were told, 'You'll do it in a day.' I wanted a week. They did an incredible job. It was shot in one day with the 65mm 3-D camera—a full-scale, stop-motion sequence shot in one day! They had piano wires strung all over the place to support the pieces, things hidden to come out of the backs of columns. It's amazing what you can do when you give people who are real filmmakers a camera and say, 'Go off and do something.' It comes up wonderful.

"Now, he didn't do it in one continuous cut, for heaven's sake. Some people said, 'Why can't he do that?' 'For crying out loud, do you want miracles?' I said. It was, I think, 13 cuts. But it works very well. Most people don't specifically notice it—it's just part of the show. But it was very, very clever and I thought they did a hell of a job. And I loved it!"

Ellenshaw has nothing but praise for the quality of his artists. "Since I'm a freelancer, I have to put together a team of people, many of whom I will have never worked with before. At one point, we were up to a good 40 to 50 people—just doing effects. They were a phenomenally good group.

"I also owe a debt of gratitude to Greg Van der Veer. He joined the staff in February 1986. We had our production meetings on Saturday, which usually started about 7 or 8 a.m. and ran all day. That was our time checking on the status of every FX shot. He joined us for a Saturday session and didn't say a word, while we agonized through every shot. He just wrote things down for the entire 12-hour session. He didn't bat an eye.

"At the end of the session he just stood up and said, 'Well, I think I'll go over to Disney and see what I can get going.' That was it. I saw him every Saturday and for dailies at 5 o'clock. He was amazing, but things began to pick up—our opticals began coming through faster.

"But I'll never forget that first day. I expected him to just stand up and say, 'Wait a minute! This is crazy! You people have 150 shots in 3-D, which means something like 300 shots to composite and match for a 17-minute film?' It wasn't until months later that he told me, 'You know that first day? I had no idea what was happening. There was so much. I couldn't believe you guys were in such an impossible situation.'

"Well, none of us knew what we were really getting into. We were just flattered to be involved—you know, with George Lucas, as executive producer, and I haven't worked on a Lucas project for seven years. That was such a great experience. I thought maybe *Captain EO* would be another great experience."

A Multi-Media Experience

Captain EO will never play in your neighborhood theater nor will you see it on TV. It can only be presented in the two specially constructed Disney theaters, where the 3-D projection system is very strictly controlled. But there is more to *Captain EO* than just what is happening on the screen; integrated with the film are a variety of *live* special effects that occur within the theater. When audiences arrive, they experience a 3-D galaxy of stars suspended in space. Real lasers fire from overhead destroying ships on screen, blasts of smoke erupt and the impact of explosions is actually felt. These effects and others created by such WDI special effects artists as Bob Joslin, Tom La Duke and Jim Mulder make *Captain EO* into a truly unique experience—a spectacular mixture of theater and film.

The theater effects and the film are carefully synchronized and controlled by computer. "For this presentation, everything is timed to the picture," explains WDI imagineer Rick Rothschild. "We transferred the film to video with



As Captain EO, Michael Jackson transforms a dark and gloomy land of evil into a world of light and color. The concept is similar to the classic Van Buren animated short, "The Sunshine Makers."

standard time code keyed to the image. This allowed me to shuttle the film back and forth on a video machine, find a frame where I saw action occurring and read the precise time code for that frame. Then, Chris Kustera and Michael Petrucci took that information and programmed it into the computer system, which controlled the theater effects, sound track and everything else. In this way, we could choreograph effects to happen on cue with particular film frames.

"After we had the timing roughed out, we had to position the effects—the laser, light and smoke effects—so that the FX would fire not only at the right time, but be aimed to match the projected image. To do this we had to find a way to still-frame project the picture. You can't just turn on a 70mm projector with a 7,000 watt lamp-house, stop a frame and look at it—not without the film being burnt to a crisp. So we used a little low-intensity lamp which we placed behind the film gate. This enabled us to roll the film down in 3-D or flat, park it on a given frame and then position the FX in the theater to the image on the screen."

One of the most spectacular and original effects occurs at the very beginning of the presentation. The theater appears to be filled with a galaxy of stars hanging in space. The effect is achieved by threading the projection screen and the theater walls with pairs of polarized optical fibers. These are the same optical fiber effects you've seen in other Disney dark rides to simulate fireworks and other light effects, but for *Captain EO* the light has been polarized to create a 3-D effect.

By varying the distance between the fiber optic pairs, the imagineers are able to position points of light in space. When the film starts, a spiral galaxy fills the screen, while the fiber optic pin points of light extend the image beyond the screen.

Captain EO is projected using the standard Disney endless loop film cabinets. Many years ago, Disney rejected the notion of standard projection reels or a platter system for its film presentations in the parks. A film in Disneyland is usually projected as part of a dark ride and must be shown over and over—thousands of times a month. Each time, the print must look as fresh and new as it did the first time—without scratches, dirt, cinch lines and other defects that would distract from the presentation. The twin film cabinets for *Captain EO* keep the 17-minute film in a sealed, dust free, humidified environment with no film surface to surface contact. The projectors have super-bright lamp-houses (7,000 watt), which maintain screen brightness through the Polaroid glasses that the audience is wearing.

One of the reasons that *Captain EO* can be viewed without eyestrain is the fact that the projectors keep the images rock steady on the screen. Most theater projectors have a small amount "weave"—that is, each frame is not precisely positioned in the film gate, so the image appears to slide around on the screen a little. In 3-D, this can be very tiring to the eye muscles, since one eye will be following the weave on one projector while the other eye is moving to follow its image. *Captain EO* avoids this problem with pin-registration at every step of the process.



Other eye comforts were achieved by maintaining an on-screen infinity point separation of no more than four inches. In reality, our eyes see distances by looking straight ahead. Human eyes are separated by an average of 2½ inches. *Captain EO*'s infinity parallax of four inches, diverges only a relatively tiny amount from that figure and should be comfortably viewable by almost anyone. Some projection situations during the 3-D of the 1950's, had on-screen infinity point divergences of twelve inches or more—another source of discomfort.


At the new Magic Eye theater in Disneyland, the sound system utilizes modern digital playback with multi-channel sound that includes body-

shaking subsonic effects. The Magic Eye theater in EPCOT still utilizes analog recordings, but the seating arrangement is more advantageous. For the best 3-D effects, avoid the front rows. In fact, any seat closer than halfway the distance to the screen will not show off the 3-D effect to its best advantage. This is true, incidentally, of any 3-D presentation. The Magic Eye theater at EPCOT has more problems keeping the left and right eye images in sync, apparently caused by power surges playing havoc with the computer systems.

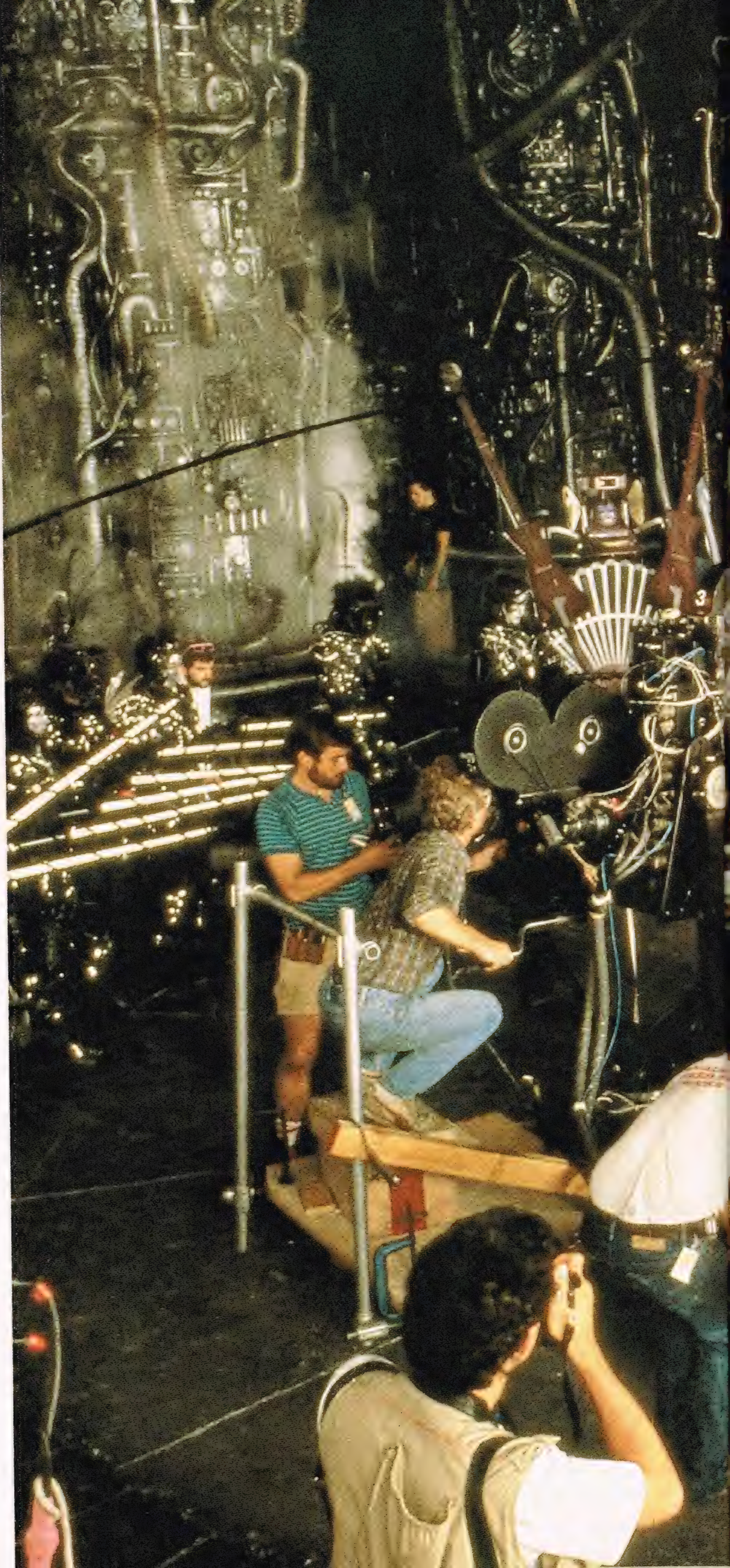
Incredibly, it was only a few short weeks before *Captain EO's* scheduled premiere that George Lucas decided that the film did not have a solid finale. Originally, part of designer Napier's concept had been for the theater itself to undergo a transformation into all the colors of the rainbow even to the extent of having floral scents wafted into the theater.

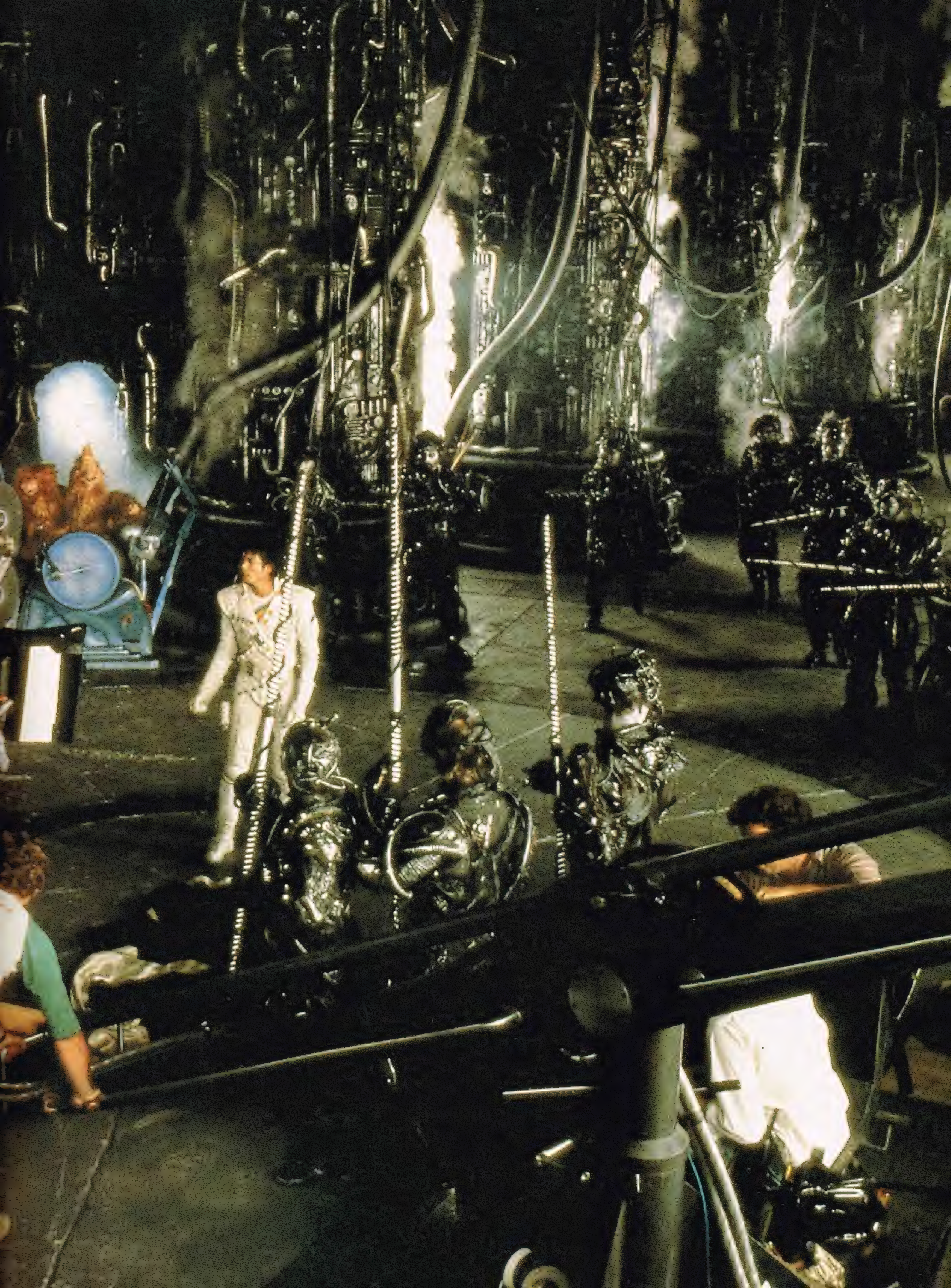
The Disney designers needed a solid finish to get people up on their feet and moving so the next show could cycle through. The WDI designers wanted a musical and visual climax. Unfortunately, Michael Jackson's music just faded out and not much of anything happened on the screen. In the end, the Disney matte department, supervised by Michael Lloyd created a whirling *Captain EO* logo that spins forward into the audience. Remarkably, it looks like the kind of move that only computer animation could achieve, but it was done using traditional methods.

Reviewers have not received *Captain EO* quite as favorably as they did *Magic Journeys*. It has been suggested that perhaps Disney was more concerned with assembling a star package than with real filmmaking. Critics have noted that Jackson's dance routines do not come over as strongly as in his previous music videos, "Thriller" and "Beat It." The costumes and sets are interesting, if dark and murky. And aside from one or two floating-in-your-lap shots, the use of 3-D seems almost trivial in comparison to *Magic Journeys*. The theater effects are fun and the sound system is great. Individually, the theater gimmicks and gags are a lot of fun, but it doesn't really add up to anything. *Captain EO* incorporates a collection of top names using state of the art techniques, but without any real vision or spirit attached to it. Aside from the 3-D effects, it's just another music video.

Nevertheless, there is no denying the enthusiastic reception by the paying public to the Disney films. With *Magic Journeys* and *Captain EO*, Disney has been able to do more than anyone else towards making 3-D an exciting and commercially viable medium for serious filmmakers. 

The Disney 3-D camera films a sequence on the *Captain EO* set. High speed Eastman 5294 was used for production photography to help alleviate the high light levels required for shooting in 3-D. *Captain EO* was shot on a sound stage at Laird (the old Seiznick studio).





BULLETIN BOARD



Star Wrek. Space—television's final frontier. These are the voyages of the starship Exitprise. Its five year mission; to try and last that long on television. To boldly make more money on toys and action figures than any show has made before. Join the adventures of Captain Jerk, Mister Schmuck, Bonehead, Snotty and Manura as they battle the fierce Klingjohns. Will they be plunged out of existence? Can Snotty stay sober? Will Mister Schmuck run out of Q-tips? These questions and less, answered in the short film, Star Wrek. Cast: Keith Friend, Daryl Johnson, Eric Jewell, Brad Yamamoto and Scott Lattrell. Directed by Eric Jewell. FX include: space scenes, huge sets, man falling from cliff, exploding cat, etc. Super-8, color, sound. Running time: 14½ minutes. (Generic Productions, c/o Eric Jewell, 5704 Linda Drive, Ft. Worth, TX 76148.)

Forgotten Garden. A no-good, but upwardly mobile young entrepreneur makes a killing with his job. His dirty deeds are discovered by his live-in girl friend, who ultimately foils him . . . after he has killed her. Super-8, color, magnetic sound with original score. Running time: 5 minutes. (Independent Productions, c/o Steve Bydal, 2912 Jaffe Road, Wilmington, DE 19808.)

Diagiesis: The story of a young man living in a world of his own creation, in which he does not allow the concept "time" to exist. He meets someone similar to himself, allows her into his world, only to be betrayed by her unwittingly, her own naivete even greater than his; they must forever remain separate. Entire production by Jeffrey Kaplan. Starring Daniel Ouellette and Mary Kelleher. Super-8 black and white, no dialogue. Running time: 20 minutes. Filmed in a "Vertical Format" (camera films on it's side projector projects on it's side). (A Loner Films Production, c/o Jeffrey Kaplan, 37 Red Barn Lane, Middletown NY 10940.)

Please forward announcements of film projects in current production or near completion to Producers' Bulletin Board, c/o CINEMAGIC, 475 Park Avenue South, New York, NY 10016. Please include a photograph of some phase of the production if possible.

Wake Up Tiger! There lived a tiger in the bamboo forest on top of the mountain. He went by the name of Tigger. Tigger the Tiger was the tiger of tigers. He was a lazy fellow always thinking of Nikuman. (Nikuman is a chinese dumpling containing minced meat.) Then, there came the Hunter. With a bang, he shot and killed the animals. He thought there were no enemies of men in the world. But he had come to wake up Tigger, the Wild Tiger. Director: Nozumi Nagasaki. Story: Tadashi Ozawa, Puppet Design: Mitsunori Yabe, Set Design: Hiromi Wakasa. Camera & Lighting: Minoru Tamura. Voices: Tokyo Vaudeville Show. Music: Kazuo Shina. Recording: Isamu Katto (Tokyo TV Center). Sound Effects: Image Factory. Editing: Naoko Aizawa. (N & G Production, Nozumi Nagasaki, 3-4, Minamitsukushino I-chome, Machida-shi, Tokyo, 194 Japan.)

Blood, Guts and Gore. The low-budget rip-off to end all. A psycho in a devil mask crashes a party and hacks everyone to bits. Cast: David Tu and a bunch of Barbie dolls. Directed by Carl Garrett. Produced by Carl Garrett and David Tu. FX include: hacked-up dolls, blood pump effects, slow motion, and motion effects with the dolls. Running time: 3 minutes. Super-8, color, silent. (Basement Films, c/o Carl Garrett, 1665 Bachan Court, Reston VA 22090.)

The Beast of Myth. A rather complicated plot, revolving around a mad doctor in Central America trying to create a monster through the use of the unwilling populace. Writer/Director/Cameraman: Sundiata Cowels. Producers: Clinton J. Cowels and Sundiata Cowels. Special Makeup Effects provided by: Random Violence, Inc. Cast: Stephen Aksman, Geeber, Didrik Hoag, Chris Morgan, Mark Usatine, Jeff Vieweg, and Scott Lozea. Effects include: monster bursting through a man's stomach and the devouring of a man's intestines. Filmed in Freehold, New Jersey. Super-8, color, sound on tape. Running time: 8 minutes. (Cowels Cinema Group release of a Burning Dead Film, c/o Sundiata Cowels, 167 Juniper Drive, Freehold, NJ 07728.)

Gore Eaters! A meteor crashes in a graveyard and brings the dead back to life (in the vein of *Night of the Living Dead*). Pretty soon the corpses eat, but the whole town and three teens band together for survival. The heroes try to kill the zombies by smashing their brains. But does it always work?!? Producer: Vince Tringalli. Director and Editor: Dan Nagle. Effects include: flesh eating, a torn throat, bullet wounds, a smashed head, a decapitation, brain eating, zombies, and gore. Filmed under the lowest budget possible. Cast: Dan Nagle, John Boothe, Vince Tringali. Filmed in Maryland, 8mm, silent. (Megabux Films, c/o Dan Nagle, 9322 Mellonbrook Road, Columbia, MD 21045.)

Beyond Tomorrow, Episode #1 "The Perfect Robot Baby."

A middle-aged couple yearning for a family decide to adopt—an android! Based upon the story by Lynda Fayle Gilmartin, published in *Woman's Day* magazine. Producer: Robert Levin, Lightspeed Productions. Director/Script: Eric Gilmartin. Cameras and lighting: Robert Salzer. Makeup: Robert Salzer and Terry Edwards. Location Managers: Eric Tolle, Brian Vitali, Mark Zukovich, Ed Talavera. Shot on 1/2-inch, color videotape. Running time: 24 minutes. Cast: Andrew Tuttle, Lynelle Paulick, Leah Battle, Eric Tolle; narrated by: Gary S. Csillaghegyi.

Arnold 2014. Welcome to Arnold, Pennsylvania. The year is 2014. After America's economic collapse of 1997, the states were given control to govern themselves independently. A madman named the Overlord has taken control of Pennsylvania and has made the small town of Arnold its capital. The Overlord's intentions are to bring America to her feet again by starting a third World War. Only a small band of rebels can prevent disaster. This is their story. (PG-13) Producer: Far Out Flicks, Inc. Directors: Mike Hoover, Dan Kellaway, Conrad Hoover. Cast: Dan Kellaway, Andrew Gardone, Angel Bellomo, Mike Hoover, Conrad Hoover, John Italiano, Chick Hopkins. FX include: gunfire, slit throat scene, scratch-on explosions. Super-8, color, sound. (Far Out Flicks, Inc., c/o Dan Kellaway, 1816 Third Avenue, Arnold PA 15068.)

Beyond Tomorrow, Episode #2 "The Last Cocktail Party."

Martin Petty would like to be the life of the party—only there is no life at this party, only a collection of gregarious ghouls. Based upon the story by Phyllis Hide published in *Concept 25* magazine. Producer/Director: Robert Levine, Lightspeed Productions. Script: Eric Gilmartin. Co-Producer/Cameras/Lighting/Makeup: Robert Salzer. Location Manager: Mariellen Wathne. Shot on 3/4-inch, color videotape. Running time: 27 minutes. Cast: Larry Westdahl, Eric Tolle, Recce Brink, Morgan Rudolph, Leslie Gangl, Ray Wallenthin, Mandy O'Hanlon, Wendy Girard; narrated by: Gary S. Csillaghegyi.

Sweet Revenge. A brutal murder of a fellow policeman plunges Lt. Jack Simpson into the horrific world of drugs, psychopaths, and danger. With the help of John Rhodes, a former Zombie Squad Cmdr, they seek out Red, the most dangerous man in Los Angeles. Unfortunately Red has a plan to destroy the LA Police and claim LA his. Fantastic adventure. Makes you sit at the edge of your seat. From the creator of *Deathrun* and *The Patrolman*. Spinetingling excitement. Director: Josh deNeveu. Produced by Cinetech Films. Cast: Dan Boone, Jon Greene, Sean Keith, Josh deNeveu and Matt McCain. Filmed on BETAmovie. 10 minutes. Stunts, pyrotechnics and on location action. (Cinetech Films/Cinetechnique Studios, 11525 Memorial Dr. Houston, Texas 77024.)



Into the Satellite Orbit. From beyond the void of space, an adventure is about to unfold. When contact with a manned space probe stranded on a distant planet is suddenly lost, a rescue craft is sent to investigate. As the rescue ship approaches its objective, its occupant is about to unravel a planet's dark secret. A secret to be revealed only to those who dare venture into the satellite orbit. Producer: E.R.J. Productions. Writer/Director/EFX: Wallace Jones. Cast: John D. Jones as the spaceman. Music: Scott Weaver. EFX include stop-motion model animation, static mattes, beam splitter EFX, etc. 16 mm color transferred to VHS video with a musical soundtrack. Running time: 25 minutes. (Wallace Jones Studios, c/o Wallace Jones, 5321 Manson Road, Julian NC 27283.)



The Adventures of Cliff Wallace—Eye Spy. Adventure. Bob the Bomber escapes from jail threatening to blow up the Brooklyn Bridge. Assigned to the case is Eye Spy—Cliff Wallace, who manages to trace Bob to a small electronics store on Manhattan's upper west side. Using his secret gadget watch, he enters the store disguised as a thug. But his identity is revealed and Cliff is forced to come up with another plan. Producer/Director: Ronald Armstrong. Animation model created by: Angel Acevedo. Animation camera work by: Oswald Wallace. Cast: Vincent Correa, and New York City Police Department. FX include: Stop-motion, rear-screen projection, miniature explosions, clay-mation and super-imposures. Running time: three minutes, Super-8 and VHS, color, sound. Copyright 1985. (Ronald Armstrong, 304 East 156 St., Bronx, NY 10451.)



Missouri Smith and the Raiders of the Lost Dimple of Toom. Comedy/spoof. Adventurer Missouri Smith is coerced by the government into recovering a magic jewel stolen from the dimple of an Indian idol. Smith must battle Bad Guy and his sinister minions before recovering the lost dimple of the idol called Toom. Director: Brian Kirk. Tech: David Massengale. Cast: John Luker, Barry Kirk, Vickie Moore. Super-8, color, added sound. Running time: 20 minutes. (KMK Productions, c/o Barry Kirk, 1406 Parkade Blvd., Columbia, MO 65203.)

Helping Hand. Up into the wee hours of the night studying for exams, an exhausted student falls asleep, only to have his nightmares materialized in the form of a small tentacled demon. The boy's right hand detaches itself from his sleeping body to defend him from the monster and a battle to the death begins atop his desk. Live action, claymation, Super-8, color, silent. Running time: 3 minutes. Written, animated and directed by Kevin J. Lindenmuth. (Brimstone Productions, c/o Kevin J. Lindenmuth, 36038 Compton Circle, Farmington Hills, MI 48018.)

Where Have All the Fishes Gone? A blind woman is at first terrorized by the visions she attracts and senses from the eyes of a local killer, but soon comes to appreciate them as the only thing she has been able to see for years. She is faced with the dilemma of bearing witness to his evil or continuing the rest of her life blind. Eventually they meet, and her fear turns to sexual attraction. The complications lead to a nightmarish confrontation that must be resolved in an abandoned church at dawn. Entire production by Jeffrey Kaplan. Starring Mary Kelleher, Kaethe Fine, and Chris Jacobson. 16 mm color/sync sound. Running time: 50 minutes (currently nearly half complete). (A Loner Films Production, c/o Jeffrey Kaplan, 37 Red Barn Lane, Middletown NY 10940.)

3-D Zombies from Outer Space. A fast and furious parody of the 50s alien invaders films. Script and story boards by Alan Williams. 16mm, color, Bolex 3-D process. Running time: 10 minutes. Produced by the 3-D Movie Division of the Stereo Club of Southern California. For more information contact chairman Bill Shepard, 17350 E. Temple Avenue #399, La Puente, CA 91790, (818) 962-9966 evenings.



El brot. A solitary girl is walking along the streets of a busy city. Someone or something is following her. Frightened, she is pursued all over the city. Finally, she arrives at home and believes she is safe, but. . . . Written and Directed by: Salvador Colomer; Casting: Carme Piqueras; Makeup: Dolors Carrion; Lights: Josep Piqueras; Assistants: Joan J. Bernal and Victor Marti; Cooperation of: Rosa M. Minarro; Sound Effects: Francesc Compte. Super-8, color. Running time: 20 minutes. Filmed in Badalona, Spain. (C & C Films, c. de Torras i Bages, 120 2n, 08915 Badalona Spain.)

The Dust. A young man breaks a clay statue that was given to him by his Grandpa. He discovers a mysterious dust inside, which has the power to make inanimate objects and the dead come alive. Cast: Larry Weeks, Dom Ramirez de Arrellano, Rita Crehan. Producer/Director/Writer/SPFX/Music/Editor: Kip Hanks. Cinematography/Asst. Editor: Don Jordan. Asst. Camera: Bill Layman. Music: Everyone's Daughter. Grip: Carol Schade. Set Designer/PA: Liz Cain. SPFX Operator: Wanda Reed. Additional Mechanics: Jerry Glenn. Effects include: two life size, fully articulated corpses and a stuffed rabbit that comes to life. 16mm, optical sound, color. Running time: 24 minutes. Financed through a grant from the American Film Institute. (Kip Hanks Productions, Inc., 7405 LaQuinta Road, Pensacola, FL 32506.)

Yorktown II: A Time to Heal. The sequel to the award winning, *Yorktown: In Temporary Command*. Details of the Yorktown's next mission are classified by Star Fleet Command. Cast: J.J. Silvia, Wil Rodriquez, Stan Y. Woo, Brian O'Brien, and George Takei. Producer: Stan Y. Woo. Director: Ronald Lennstrom. FX include: blue screen, mattes and miniatures. Super-8, color, in stereo with encoded rear channel. (FASM Pictures, 1547 South Van Ness Avenue, Los Angeles, CA 90019.)

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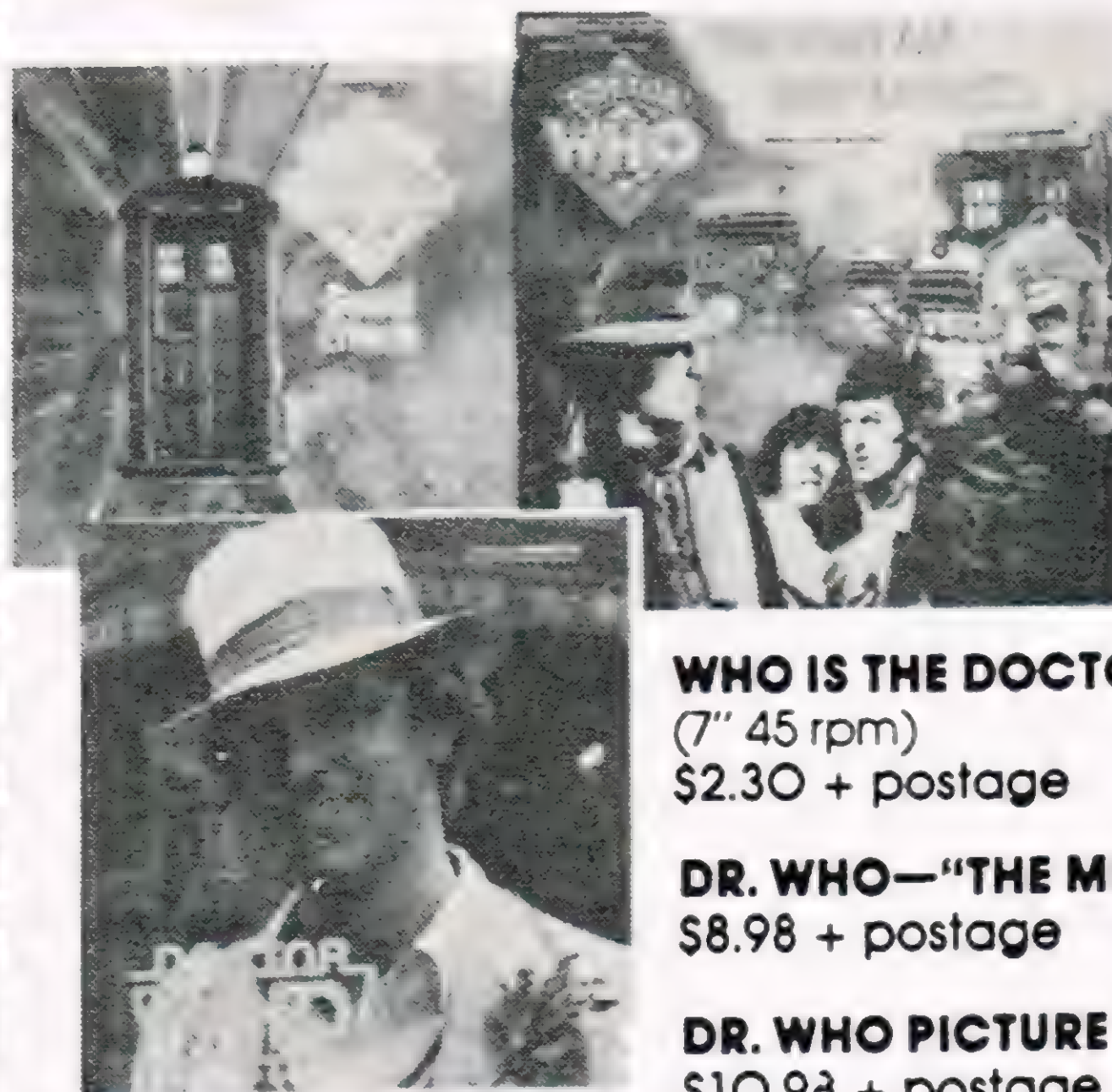
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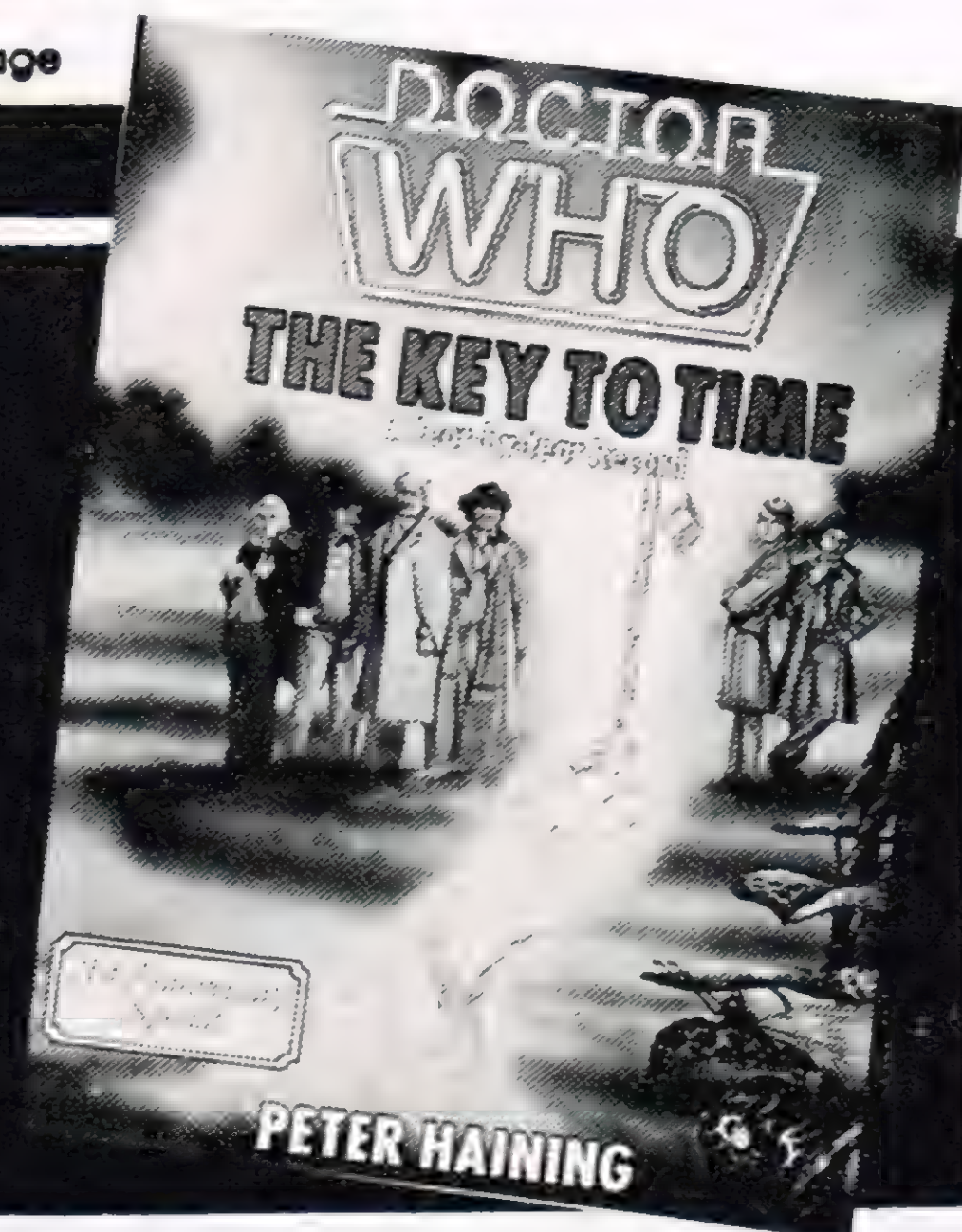
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Animation ARCHIVE

The Making of **The Aristocats**

Disney's
Spring
animated
feature
re-release.



PHOTOS: © 1970 The WALT DISNEY COMPANY



Three high-society kittens with a fat inheritance are Toulouse, Berlioz and Marie. Using paints mixed and processed in the Disney lab, Peggy Plowden paints Xeroxed cels of Toulous.

Originally, released in 1970, *The Aristocats* is the last animated feature in which Walt Disney was personally involved. Though he had initiated pre-production plans, Disney died before full production began. Written by Tom McGowan and Tom Rowe, this animated feline fantasy is based on a true story of a Parisian family of cats that become heirs to a fabulous fortune circa 1910.

The story begins when Madame Bonfamille, a kind, elderly, eccentric millionairess, wills her entire estate to her cats: Duchess and her three kittens, Marie, Toulouse and Berlioz. The butler overhears Madame dictating to elderly lawyer friend, Monsieur Hautecourt, that upon the demise of the cats, the fortune shall be redirected to her faithful butler, Edgar. Normally a benign individual, Edgar's avarice gets the best of him, and he decides to eliminate the feline heirs.

Four years in the making, the \$4 million feature employed more than 250 top artists and technicians to produce the necessary 325,000 individual drawings. Utilizing the Xerox process to transfer the animator's drawings to cels that was introduced on a large scale in *101 Dalmatians* (1961) and further developed for

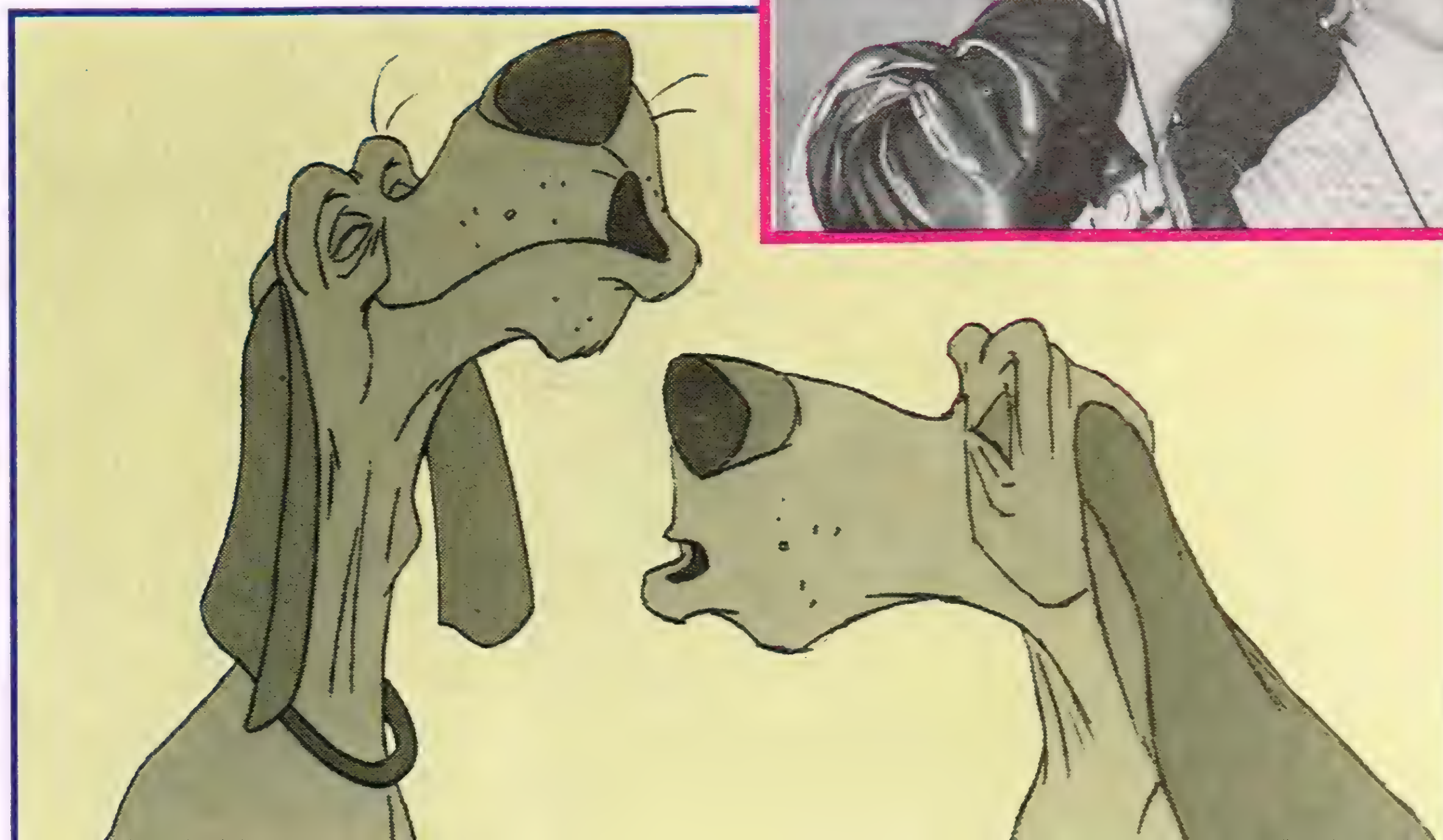
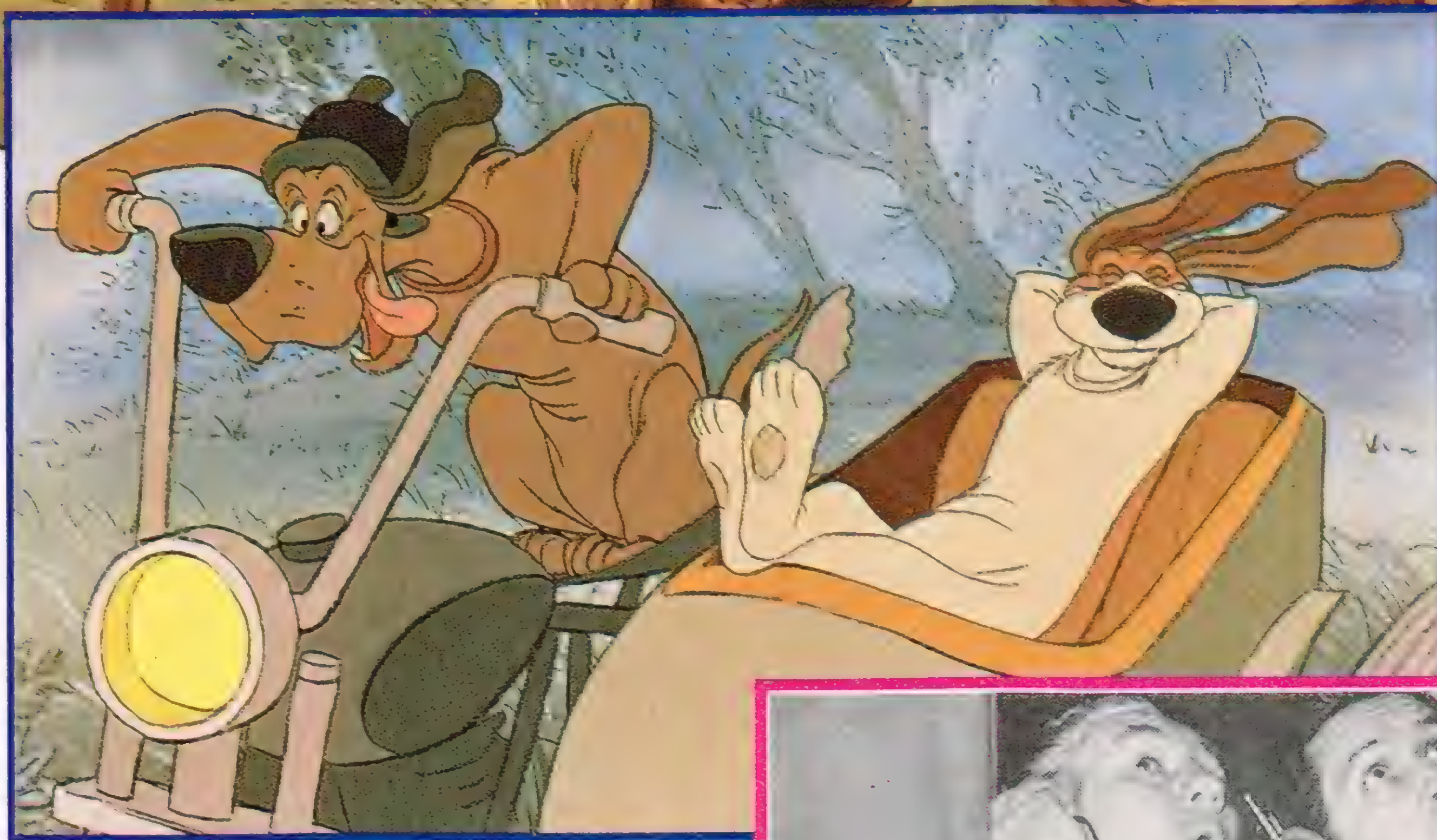


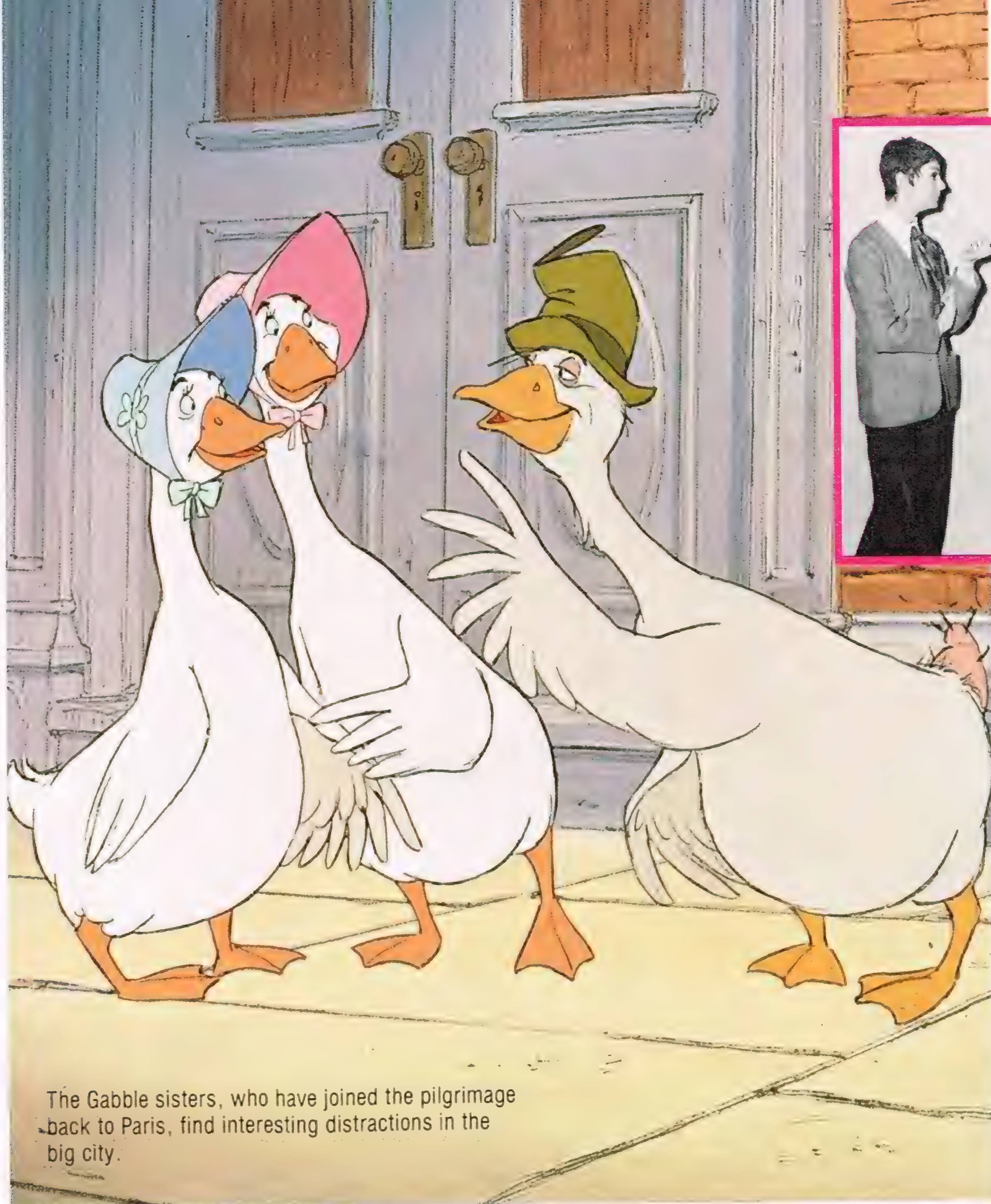
Kittens Berlioz and Marie are at the piano under the watchful eye of their mother, Duchess.

Jungle Book (1967), *The Aristocats* retains the visibly sketchy outlines of the animator's pencils, and sets the characters against flat, pastel backgrounds. It wasn't until the much later films, *The Fox and The Hound* (1980) and *The Great Mouse Detective* (1986) that clean-up work improved sufficiently for the artwork to take on a smoother more finished look.

As is the custom at the Disney Studios, the animated animal stars were modeled by live animals. The animators spent hours watching live kittens, dogs, and geese, as well as motion picture footage of them and sketching from both. Many of the characters' personalities were specifically derived from watching animals in natural situations. Animator Ollie Johnston created two giddy spinsters, Amelia and Abigail, after watching a pair of very suspicious and haughty geese. The two farm dogs, Napoleon and Lafayette, were so successful in their first sequence that the story was changed so they could come in again.

Homespun TV comedians Pat Buttram and George Lindsey howl and carry on as the voices for Napoleon and Lafayette, hilarious country hounds.





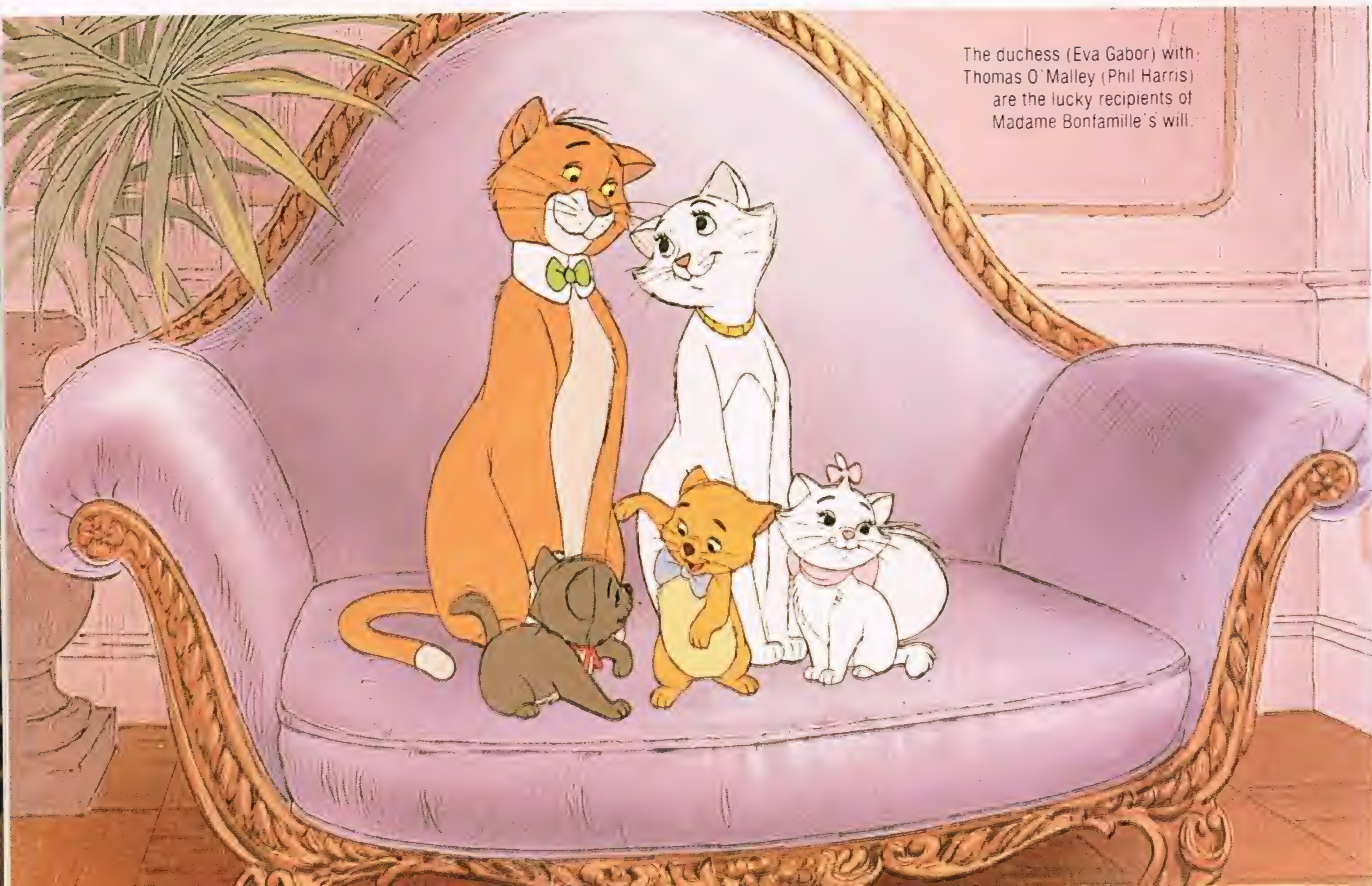
The Gable sisters, who have joined the pilgrimage back to Paris, find interesting distractions in the big city.



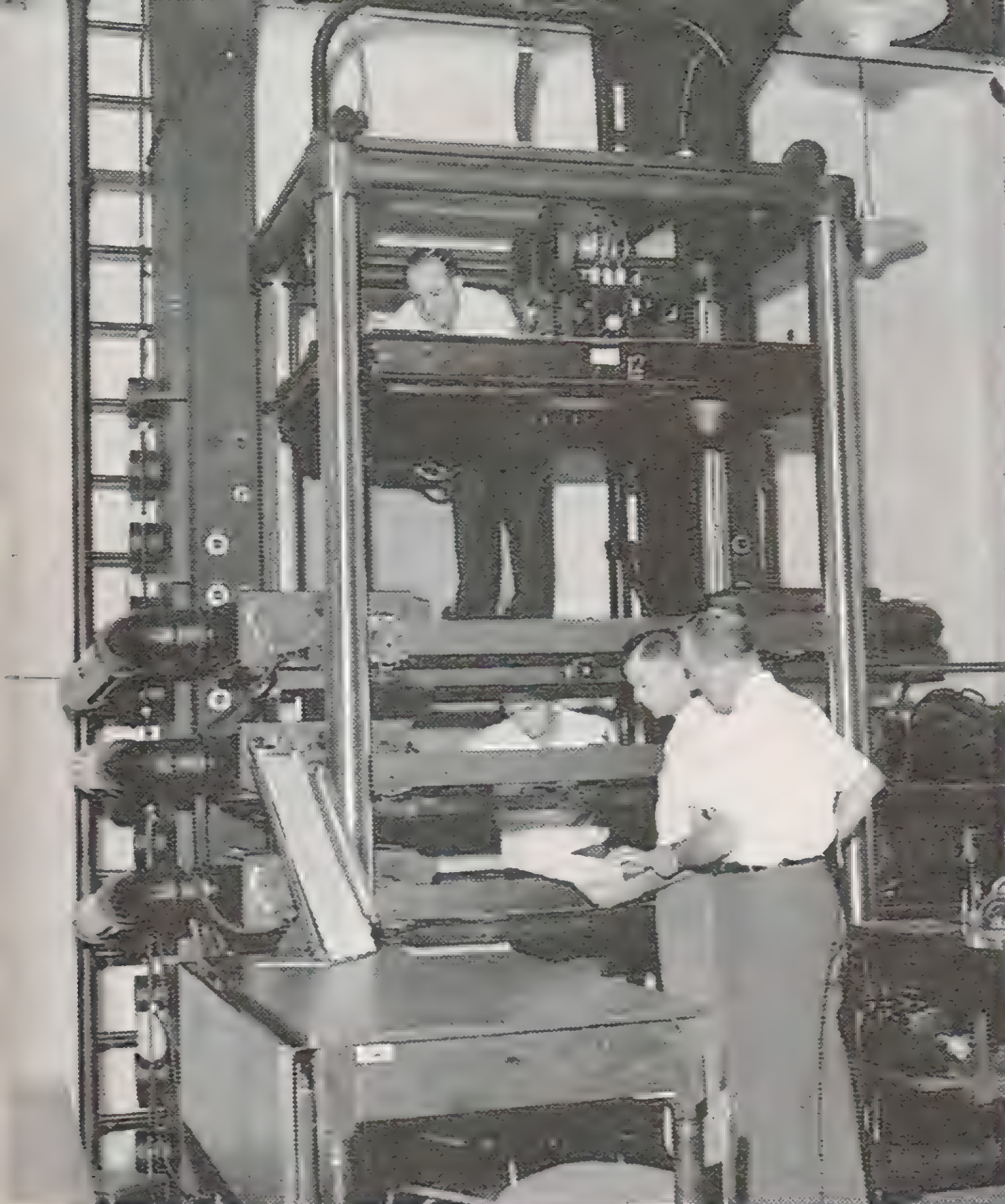
British comedienne Carle Shelley and Monica Evans, from TV's *The Odd Couple*, supply the giddy voices of two daffy geese, the Gable sisters.

In this film, as in *Jungle Book*, a number of famous personalities were hired to play themselves, while supplying voices for the characters. Phil Harris, who was the voice of Baloo in *The Jungle Book*, returned to Disney for the role of O'Malley, the playboy alley cat hero of *The Aristocats*.

"I was so enthused about being at Disney again for *The Aristocats*, just playing myself again," says Harris. "They even let me change some of the lines to make them fit my personality."



The duchess (Eva Gabor) with Thomas O'Malley (Phil Harris) are the lucky recipients of Madame Bonfamille's will.



Production camera supervisor Dick Grills checks the multiplane camera set-up with operator Ed Cook, while assistants Paul Whitehouse and Jim Pickel adjust the different planes for the next shot on Disney's unique multi-plane camera system, which was invented by Ub Iwerks.

Finding the right voice for an animated character is a difficult and critical chore. A good character voice should conjure up a strong visual image for the animator to work with. Unfortunately, if that voice is also a well-known public personality, this can get in the way of the characterization, rather than enhancing it.

Eva Gabor's voice is so rich with the qualities of warmth and elegance that she was asked to portray Duchess the feline heroine. "It's the first time I've done a voice for an animated character," she reveals. "It was complicated, but terribly interesting. To play a cat, you have to imagine how it is going to react and move... as though it were human." She was so successful in her role that she was called back some years later to voice Bianca in *The Rescuers* (1977).

Sterling Holloway's distinctive voice has been known and loved by generations of Disney fans. Here he speaks for the mouse, Roquefort, a self-styled sleuth who attempts to solve the cat napping. He has appeared in more than 60 films and supplied Disney with voices for such varied characters as a bear, stork, pelican, skunk, cat, snake, car, lion, penguin, house and even a hot stove. His favorite characterization is Winnie the Pooh.

English character actress Hermione

While watching the film, veteran sound effects man James MacDonald creates the various sounds and noises that complement the action.



Baddeley who is perhaps best remembered as the busy housekeeper polishing up the brasses in the Banks' household in *Mary Poppins*. For *The Aristocats*, she created the voice for Madame Bonfamille, the millionairess whose unorthodox will—leaving her fortune to her cats—triggers the plot.

The two hounds, Napoleon and Lafayette, are voiced by TV comedians Pat Buttram and George Lindsey. Scatman Crothers is Scat Cat and the members of his band are Paul Winchell, the Chinese cat; Vito Scotti, the Italian cat; Tim Hudson, the English cat, and Thurl Ravenscroft, the Russian cat.

Monica Evans and Carole Shelley, two bright English actresses best known for their roles as sisters, supply the hysterical voices of the two daffy geese known as the Gabble Sisters. These characters were based partially on the Pigeon Sisters, whom Evans and Shelley created for the Broadway (and later for TV) production of Neil Simon's *The Odd Couple*.

The production team was headed by coproducers Winston Hibler and Wolfgang Reitherman. In a new approach to developing the story's plot, all the main action in the film was outlined in scrupulous detail before animation production began.

The Academy Award winning Sherman Brothers, Robert B. and Richard M. of *Mary Poppins* fame, wrote three original songs, including the title tune recorded by Maurice Chevalier. Director Reitherman flew to Paris with composer-conductor George Bruns and writer Larry Clemmons to record Chevalier's rendition of the tune, which was done after just one rehearsal.

The Shermans' other songs are: "She Never Felt Alone" sung by Eva Gabor, and "Scales and Arpeggios," a children's tune sung by the three kittens and Duchess. The three kittens are: Gary Dublin, who plays Toulouse, a painter yearning to be a tough alley cat; Dean Clark, who speaks for Berlioz, a musical kitten who enjoys catching his sister's tail in the piano keys; and Liz English, who plays Marie, a dignified little lady ready to fight her brothers to prove it.

Two additional songs were contributed by other composers. Terry Gilkyson wrote "Thomas O'Malley Cat," which Phil Harris performs. Floyd Huddleston and Al Rinker wrote "Ev'rybody Wants to be a Cat," which is dynamically rendered by Scatman Crothers and the alley cat band.

The French flavored musical score for *The Aristocats* was composed and conducted by George Bruns, a Disney staff composer since 1953 whose greatest single triumph was "The Ballad of Davy Crockett," which sold 10 million records.

An interesting dual performance is achieved by Nancy Kulp of *The Beverly Hillbillies* fame and comedian Ruth Buzzi. While Kulp neighs the dialog for Frou Frou, the carriage horse, Buzzi sings.

The Aristocats is scheduled for nationwide, Spring vacation re-release.

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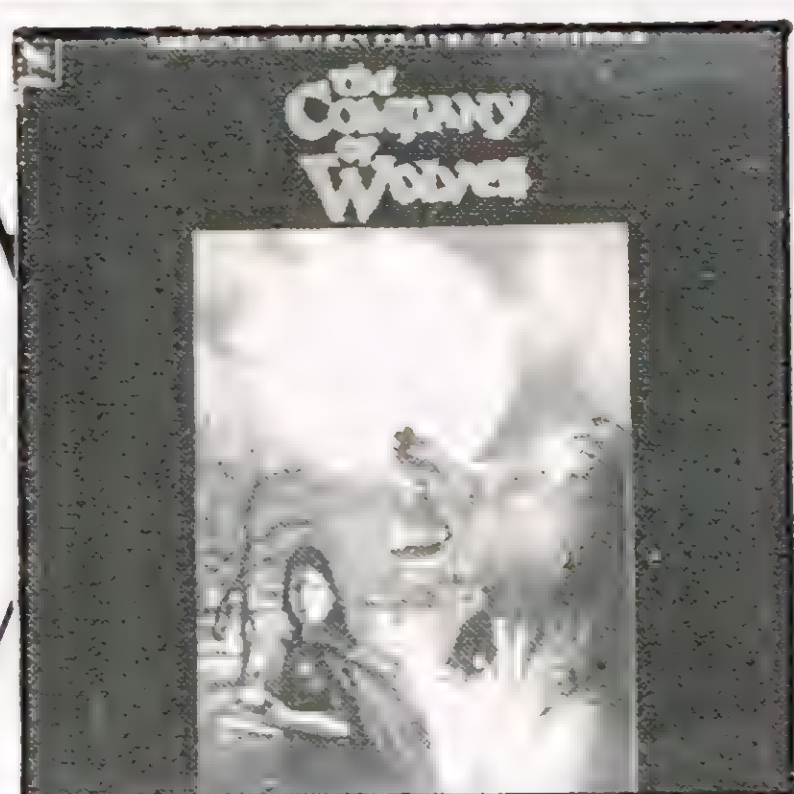
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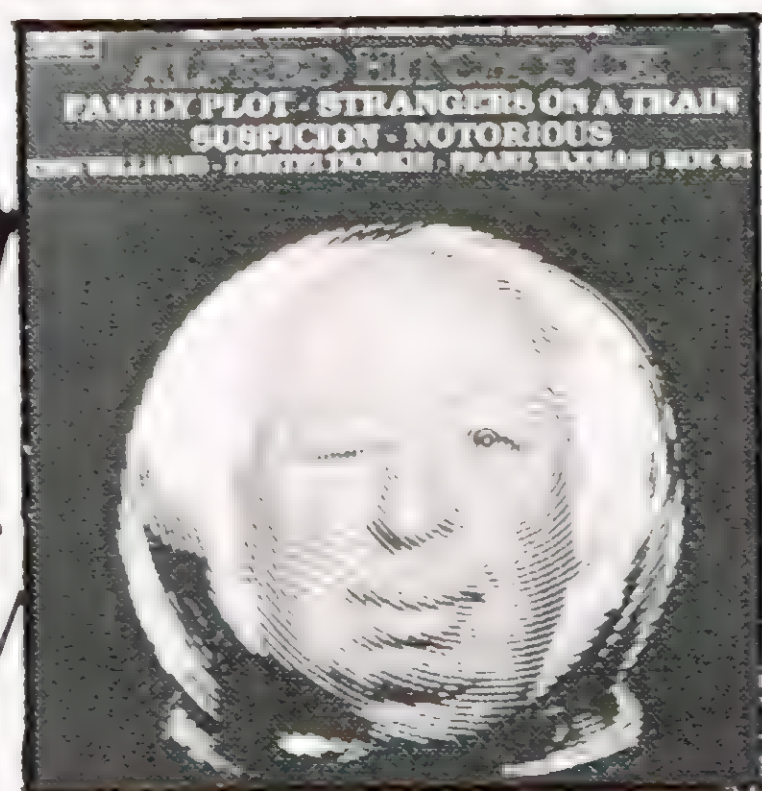
NEW!



THE COMPANY OF WOLVES

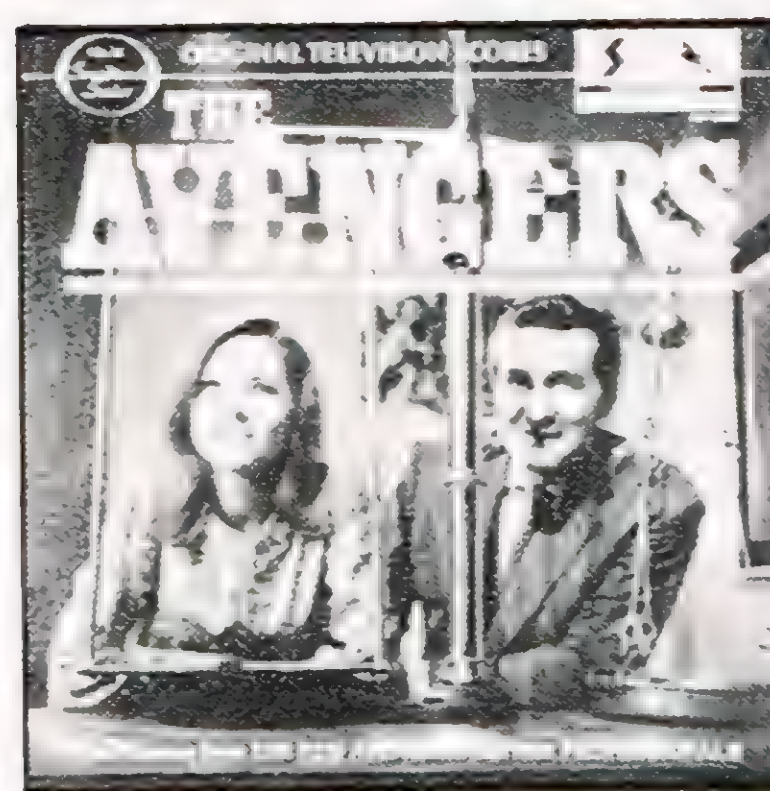
Classic, folk and original melodies by George Fenton mix in this dark, haunting orchestra-with-organ score.

NEW!



ALFRED HITCHCOCK

New digital recording (Utah Symphony) from "Family Plot" John Williams, "Suspicion" Waxman, "Strangers On A Train" & "Notorious."



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Themes from the series, plus THE NEW AVENGERS and THE PROFESSIONALS.



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Jack Nitzsche's haunting, romantic score to John Carpenter's exciting alien adventure.



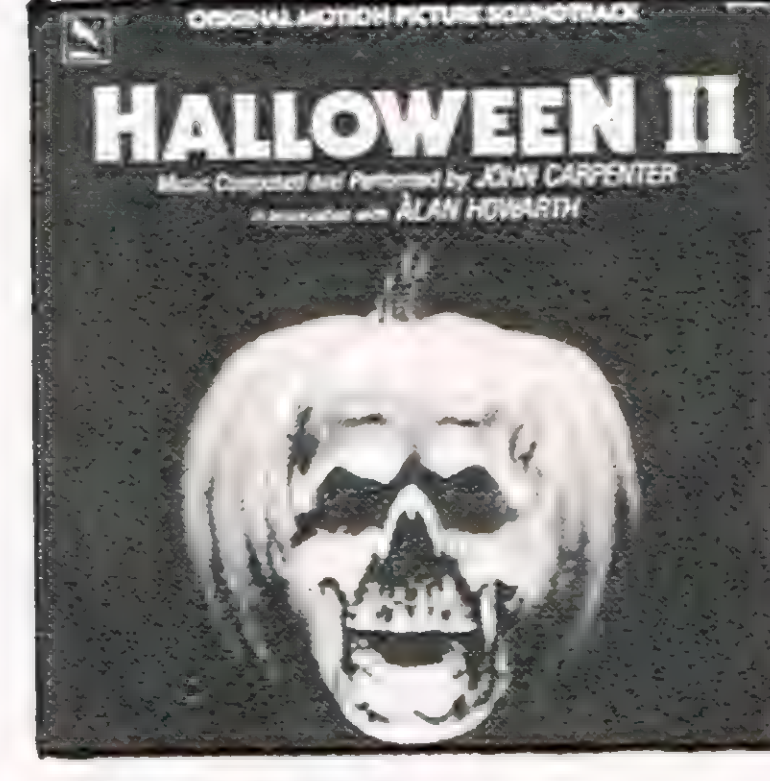
HALLOWEEN

Chill all year 'round to music composed and performed by John Carpenter.



BATTLE BEYOND THE STARS

Exciting orchestral score for humorous SF adventure. RARE!



HALLOWEEN II

Music to scream to, by the maker of Halloween.

NEW!



TEEN WOLF

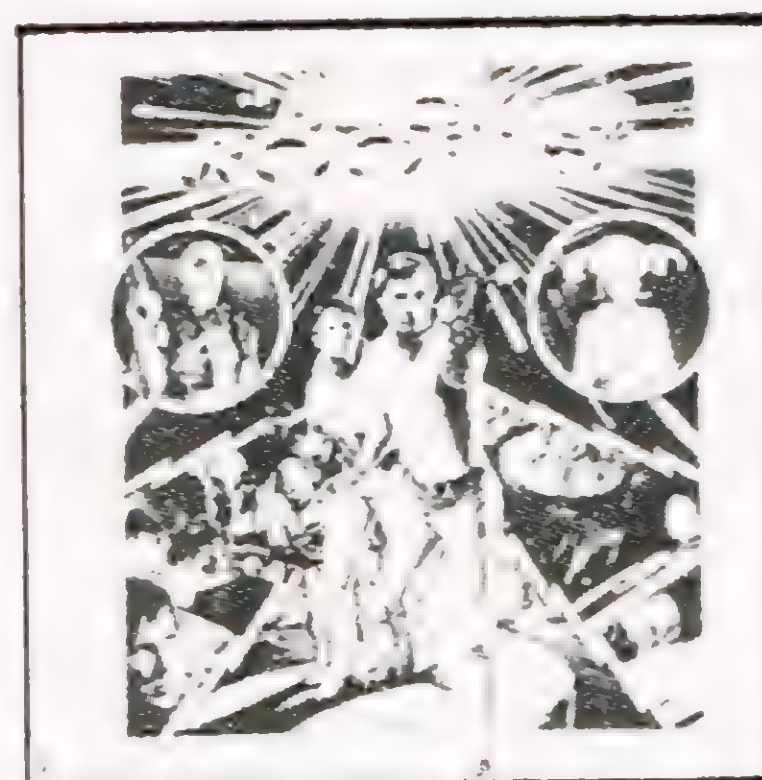
Hilarious, hit Michael J. Fox film with hot, pop music by Miles Goodman.

NEW!



STAR TREK TV—Vol. 1 & 2

Music from the classic series that started it all. Available in two separate volumes.



BUCK ROGERS

The original motion picture soundtrack, composed and conducted by Stu Phillips.



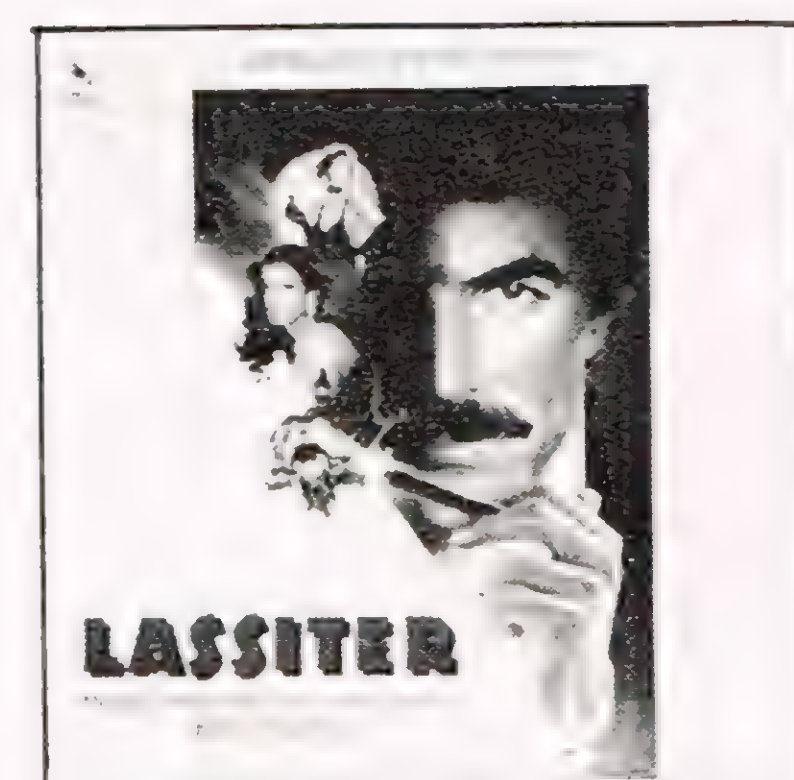
STAR TREK II: WRATH OF KHAN

James Horner's score for the popular film. Digital.



IT'S ALIVE 2

Bernard Herrmann's 50th and last soundtrack score.



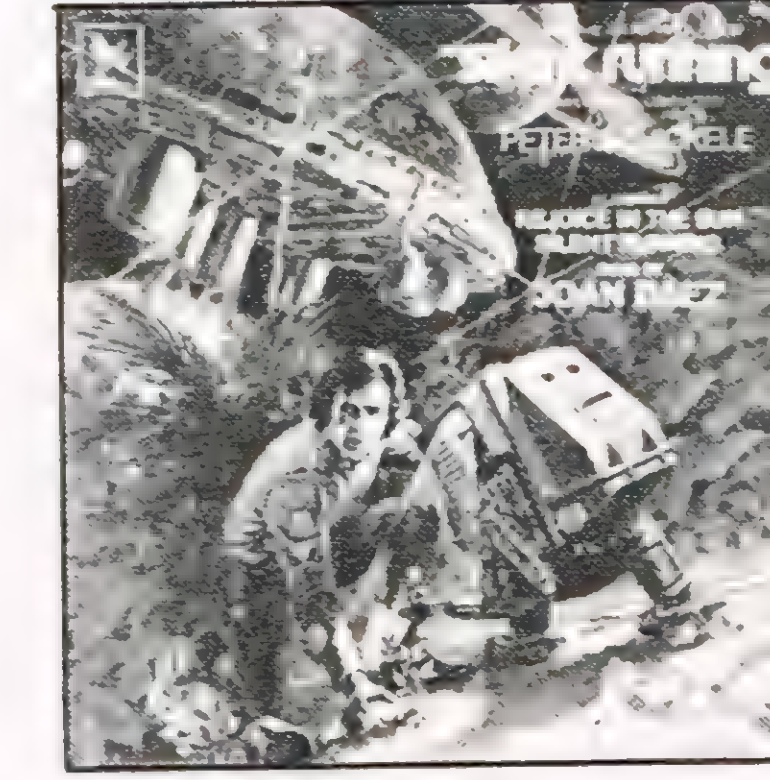
LISSITER

Ken Thorne's driving orchestral soundtrack to Tom Selleck detective caper.



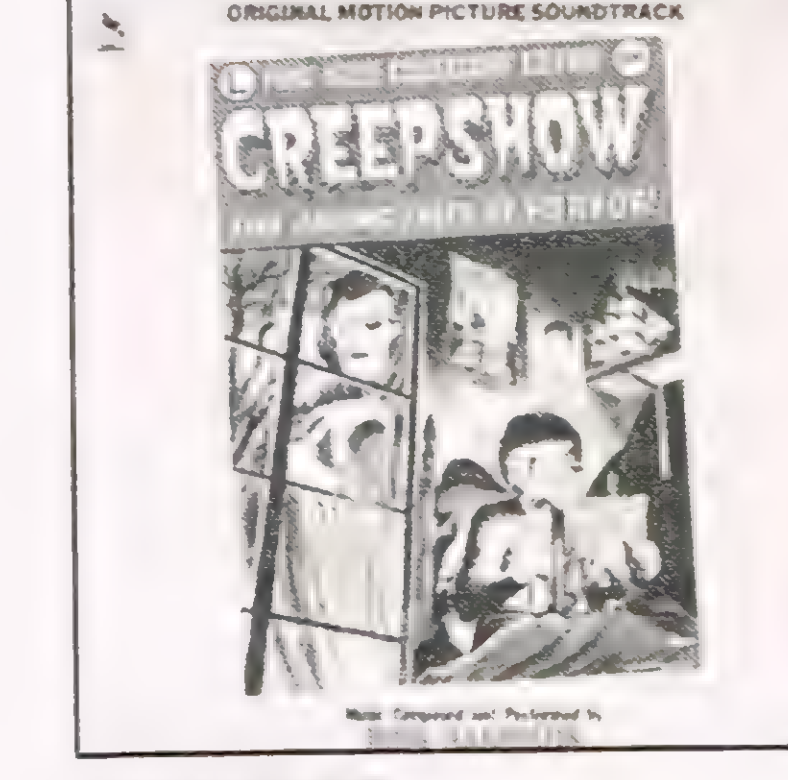
SECRET AGENT FILE

18 cuts in all! Bond films, "Ace of Spies," "U.N.C.L.E.," "I Spy" & others.



SILENT RUNNING

Music by Peter Schickele; songs by Joan Baez. Newly remastered.



CREEPSHOW

Soundtrack composed by John Harrison. Wild synthesizer music and effects.



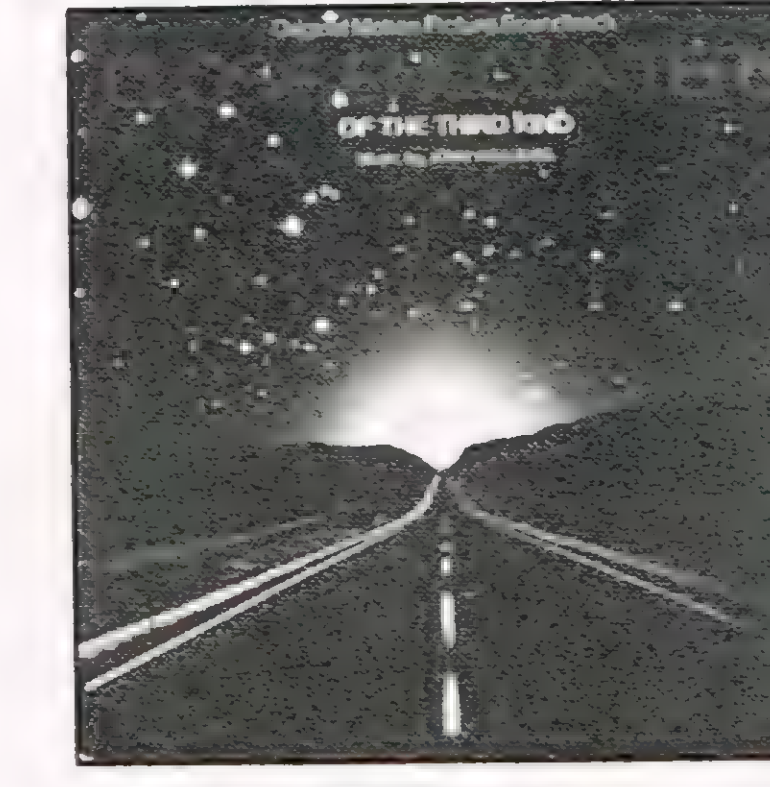
TOP SECRET

Maurice Jarre conducts Royal Philharmonic Orchestra (digital-mix) for this lush, madcap comedy.



THE LAST STARFIGHTER

Thrilling music by Craig Safan from computer-graphics space adventure.



CLOSE ENCOUNTERS OF THE THIRD KIND

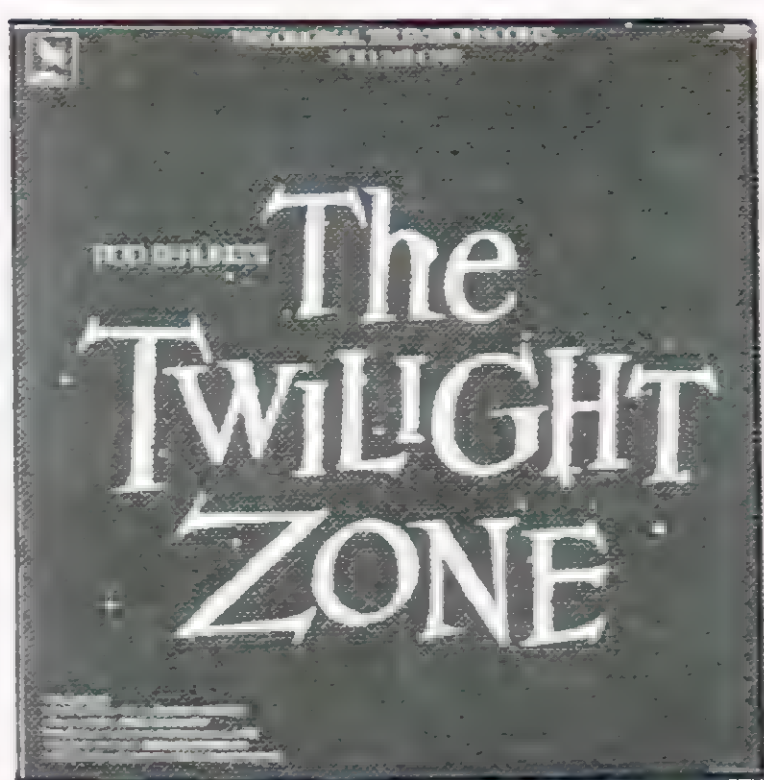
John Williams's soundtrack score.



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VOLUME II:

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VOLUME III:

Music by Jerry Goldsmith, Bernard Herrmann, Nathan Van Cleave, Leonard Rosenman and Marius Constant's alternate Main & End Title music.

VOLUME IV:

Music by Jerry Goldsmith, Fred Steiner, Van Cleave, plus Bernard Herrmann's alternate Main and End Title themes.

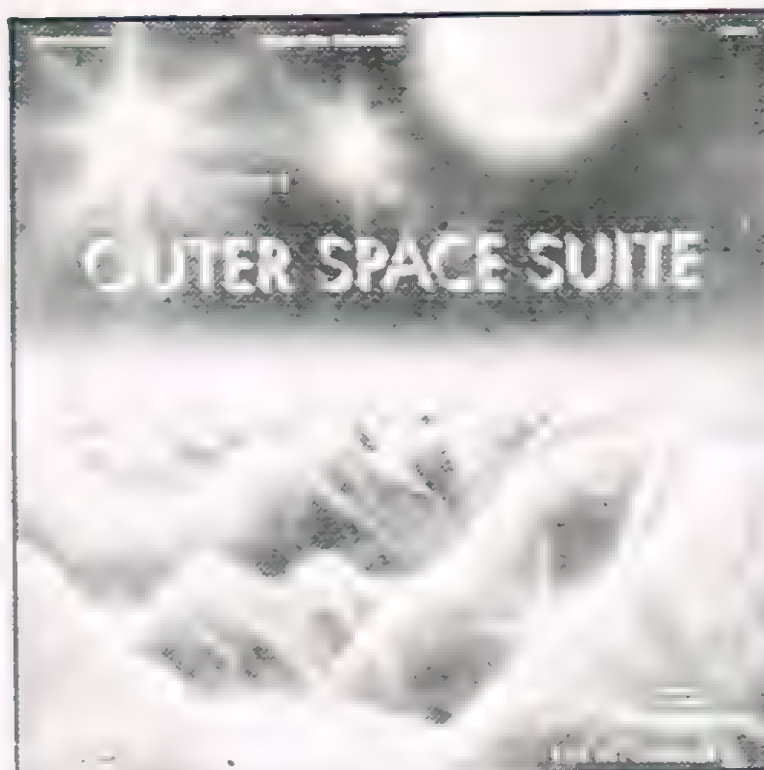
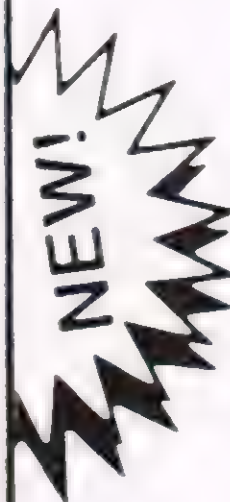
VOLUME V:

Music by Goldsmith, Fred Steiner, Van Cleave and Jeff Alexander—plus alternate titles by Bernard Herrmann.



ICE MAN

Lush, raw score by Bruce Smeaton to Tim Hutton adventure/drama.



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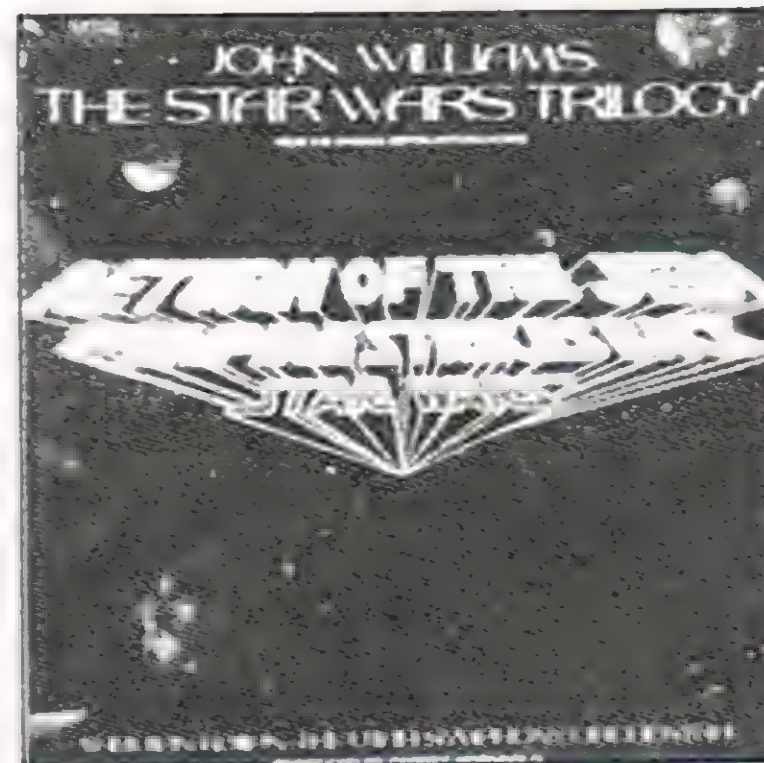
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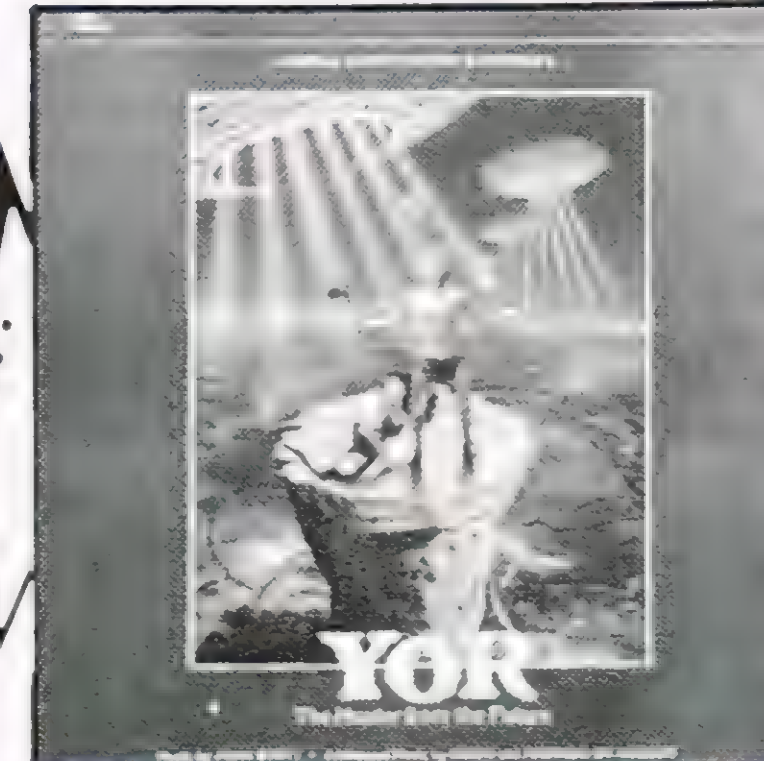
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Presto Chango!

A werewolf action head.

By JACK IMES, JR.

PHOTO 2



PHOTO 1

This article describes an action puppet head that can dramatically change its appearance during a shot. The head was designed for a werewolf transformation scene. Photos 1 and 2 show the change effect. Modeled to look like the human actor, the head undergoes a rapid change: teeth and fangs baring, jaws extending to a wolfish profile, skin stretching for the lean and mean look. When intercut with shots of the actor and the more fully detailed animation puppet the "change-head" serves as a startling transition.

Clay is used to create the original head. The features of the human actor are copied closely using an oil-based clay such as Roma Plastilina (about one-half pound was used for this head). Photo 3

shows the modeled head and is about three inches high. This head is used to make the plaster mold and will be ruined in the process, so take photos of your work for a visual record.

A standard mold is made of the front half of the clay head. A hard plaster is used, in this case Hydrocal gypsum. This "plaster" is really termed a "cement" and will hold small details much, much better than ordinary Plaster of Paris, which is too soft for a good mold.

A small amount of Hydrocal, four to five pounds, can usually be found at hobby stores in the train department. Model railroad folks smear the stuff over chickenwire forms for making miniature landscapes and mountains.

The Hydrocal is sprinkled into a plastic

milk jug (the top cut off to make a disposable mixing container), which has previously been filled with about two cups of cold water. When the plaster is mixed to the consistency of a thick cream, use an old paint brush to dab some of the plaster onto the clay head. A thin layer of plaster will be enough to capture all the small surface details. Pour the remaining plaster over the head. This will be a lot easier to manage if you first build a small retaining wall around the back and base of the head using the Plastilina clay. Photo 4 shows the wall and semi-liquid plaster.

As the plaster continues to harden and stiffen, it is troweled and smoothed with a plastic dinner knife. This makes for a more uniform thickness over the mold area. After about half an hour, the Hydrocal is rock hard and the clay is pulled out to leave a perfect negative mold for casting. One note: Never pour excess plaster down the sink—you'll only end up plugging the drain trap and run up a plumbing bill. Dispose of waste plaster by throwing it into the trash.

Liquid latex can be bought at most art supply stores, usually as "Mold Rubber" in a plastic bottle. You'll only need about two ounces for this project, so an 8 ounce bottle will provide plenty for several castings. The white liquid latex is easily tinted using a few drops of artist's tube acrylic.

Paint a thin layer of liquid latex into the mold using a paintbrush. The latex will ruin the brush, so use an old or cheap one. The latex coat must be applied as a very thin layer to avoid "puddling"—small pools of latex that are too thick to dry properly and stay liquid. A hair dryer gun can help speed drying time by blowing warm air into the mold cavity.

After three coats are applied, the dried latex is gently pulled free of the mold. The result is a soft masklike version of the clay original. Photo 5 shows how it looks at this point. If there is any difficulty in pulling the dried latex from the mold, use a bit of cooking oil next time to coat the interior of the mold. This acts as a separator to keep the latex from sticking.

The head's frame support is nothing more than a sturdy piece of wood, such as a short two-by-four inch board. A brass strip, one half by ten inches, obtained from the hobby store will hold the flexible latex "skin" in an upright position. Holes drilled into the ends of the brass strip enable it to be nailed securely onto the wood support. The diagram shows the way the pieces go together. Also shown are the two brass rods, one-eighth by twelve inches, also obtained at the hobby store. The rods are capped with jaw and fang pieces modeled in a plastic clay known as Sculpey which can be hardened by baking them in the oven according to the Sculpey directions. The mouth pieces are then painted and glued to the rods with a quick-drying epoxy glue.

The latex "skin" is edge-glued to the brass frame using a quick-bonding or "instant" liquid adhesive. Likewise the

PHOTO 3

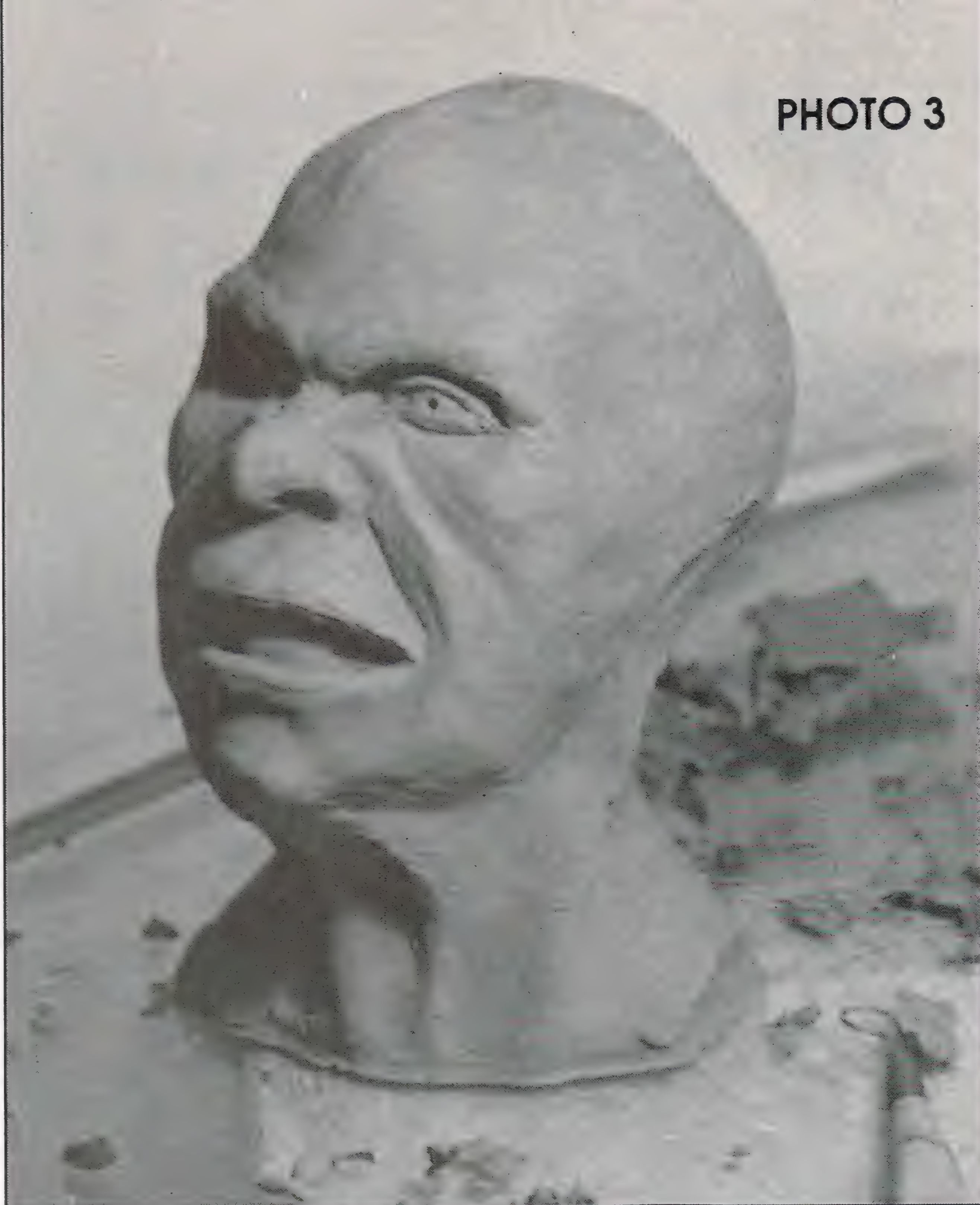
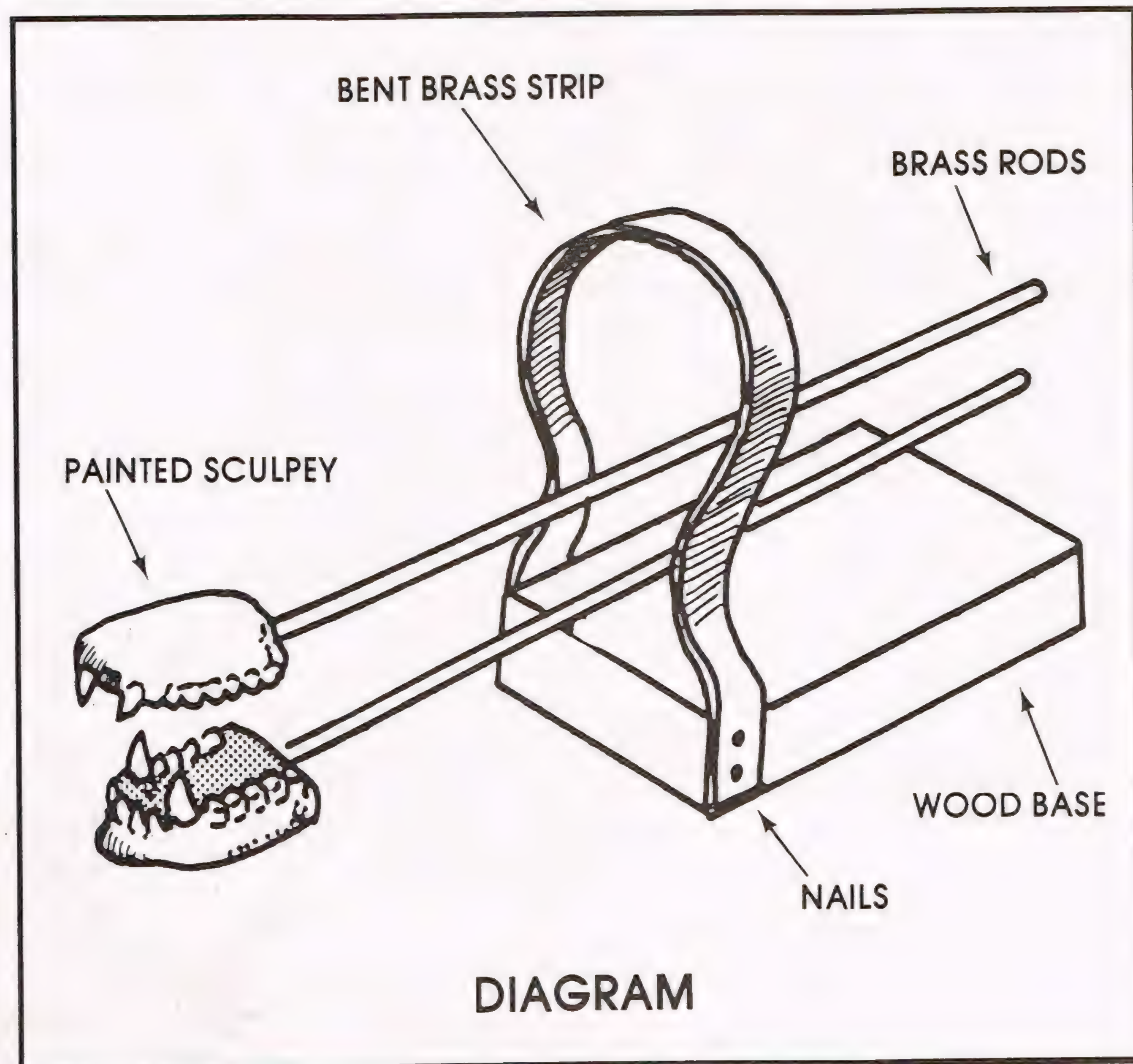


PHOTO 4



PHOTO 5



mouth parts are carefully glued to the interior of the latex mask. Any sagging areas of the face can be remedied by packing the interior with a few cotton balls glued into place.

The head is finished off with acrylic paint for eyes and lips, smudges of pastel chalk for "makeup" and topped with hair made from jacket fur or yarn.

The head is lighted and filmed in closeup, the arrangement of light and shadow to match the live action as closely as possible. This helps to make the transition from actor to change-head smoother.

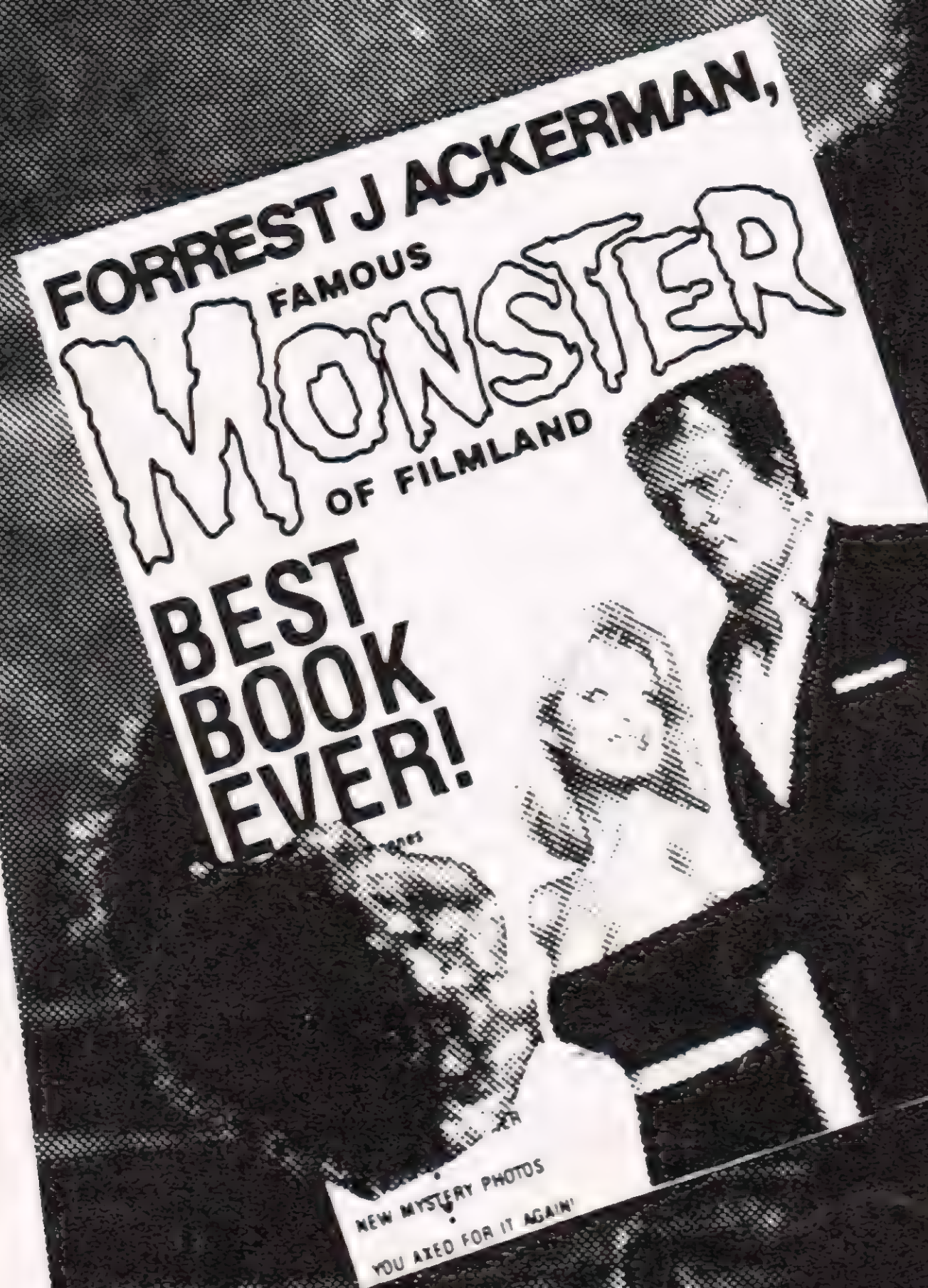
To transform the normal appearance of the face into the werewolf look, the rods are slowly pushed forward. This causes the skin to stretch as the jaws distort the face. In addition the operator can wiggle the rods gently to stimulate the open and close action of the mouth to create a life-like movement.

This simple puppet can really catch attention during its brief appearance on the screen. It's fun to make, and you can quickly gain experience in designing, sculpting and moldmaking for future and more complicated action heads. Imagine how you might do something with the puppet eyes? In closing, you can use an action head to create a dramatic werewolf scene that will be a "howling" success! *CM*

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The SOURCE

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By JOHN DODS

It's here: the new, revised, updated, and renovated supply source listing—the list for people who make things. With an admitted prejudice towards the interests of model-makers, makeup artists, and stop-motion animators, we bring you a source for practically anything you may need for the creation of film magic. Where else could you find out where to order the same type of cable-control handles used by Rick Baker, or what company sells artificial eyeballs for only \$2.00 per pair (they're not bad either), or a source of 101 different kinds of tweezers? Do you need a beard protector? It's in here.

Many companies—especially large ones—will send sample materials on request without charge. If the company thinks that you are a *serious* potential customer, they will often be

happy to send you enough of their product to enable you to "do tests." I have sometimes received samples so generous that I never had to order the product at all! A self-confident authoritative phone voice will help to persuade the sales rep that the request is coming from an authorized person. You may not be taken seriously if your voice conveys too much youth. Alternatively, a typed request mailed on stationery having a printed letterhead should work as well.

Safety materials are listed first because they are the most important. (Stay tuned to this magazine for next issues startling report on the dangers of commonly used makeup and effects materials.) If you don't own a respirator, hold your breath till your order arrives and read on . . .

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New York, NY 16036
(212) 819-0030
Professional quality wigs made to order. Also, wigs for rent.

Body Parts

(see under "Cable Control")
Distributes low cost prefab wigs by Rene of Paris.

Borge Pharmaceuticals

9929 Hilbert Street
San Diego, CA 92131
(619) 578-5400
Gelatin. Ask for "Photo-Studio Grade" @ \$4.00 per lb.

Callahan Chemical Co.

200 Industrial Avenue
P.O. Box 29
Ridgefield Park, NJ 07660
(201) 440-9000
Carries gelatin and glycerine used to make gelatin prosthetics. Also, methocel, a powdery thickening agent for making K-Y Jelly type goop.

City Chemical

132 West 22nd Street
 New York, NY
 (212) 929-2723
 Glycerine and gelatin
 (5 lbs of gelatin is about \$40.00).

Fiberbilt

601 West 26th Street
 New York, NY 10001
 (800) 847-4176
 Many types of quality makeup cases. Color catalog.

Frends Beauty Supply Co.

5202 Laurel Canyon Blvd.
 North Hollywood, CA
 (213) 877-4828
 Carries Burman foamed latex and full line of pro makeup supplies.

The Makeup Place

1147 East Broadway
 Box 155
 Glendale, CA 91205
 (213) 669-1161
 Some prices are below Alcone's they carry most major brands.

Research Council of Makeup Artists, Inc.

P.O. Box 66181
 Los Angeles, CA 90066
 (213) 397-3387
 This is Vincent Kehoe's Company, formerly located in N.Y.C. selling good quality, but expensive makeup materials designed to appeal to professional makeup artists. \$50.00 minimum.

MODELS AND REFERENCE MATERIALS**Carolina Biological Supply Co.**

2700 York Road
 Burlington, NC 27215
 (800) 334-5551
 This is the "Sears catalog" of natural sciences. Skulls, skeletons, preserved animals (you name it), books, slides, etc. Their 1000-page color catalog is spectacular.

Wards Natural Science Establishment

P.O. Box 92912
 Rochester, NY 14692
 (716) 359-2502
 Skulls, skeletons, etc.

MOLDING AND CASTING MATERIALS**A-R Products**

8024 Westman Avenue
 P.O. Box 4312
 Whittier, CA 90606
 (213) 698-3008
 Latex rubbers and pigments for same. Also, plastic mold-making materials.

Adhesive Products Corp.

1660 Boone Avenue
 Bronx, NY 10460
 (212) 542-4600
 RTV rubber (silicone), Monzini casting resin, liquid latex, polyester resins.

Alcone Co.

(see under "Makeup supplies")
 Sells the popular "McLaughlin" foam rubber that is widely used in the effects industry.

BJB Enterprises, Inc.

6350 Industry Way
 Westminster, CA 92683
 (213) 598-7777 (714) 894-0647
 Makes the popular "Skinflex" material, a polyurethane specifically made to simulate flesh. Also, good cold foams, (hard and soft) epoxy resins, pigments and releases.

Cabot Corporation

125 High Street
 Boston, MA
 (617) 423-6000
 Sells Cabosil, a thickening agent commonly used with silicones, poly-urethanes, etc.

Cementex Latex Corp.

480 Canal Street
 New York, NY 10013
 (242) 226-5832
 A selection of latex formulations including L-200 which is used with #64 filler to achieve any degree of stiffness or flexibility.

Freeman

43 Montgomery
 Belleville, NY 07109
 (201) 759-5700, also located in:
 Paramount, CA (800) 325-2100
 Milwaukee, WI (800) 558-0866
 Cleveland, OH (800) 362-2000
 Fort Worth, TX (800) 433-5525
 Roseville, MI (800) 345-9259
 Carries 9 kinds of plasters including Ultracal 30, Hydrocal B-11, and Pottery plaster. Call for their catalog "Pattern shop repair, reproduction, and finishing materials."

IASCO

5724 West 36th Street
 Minneapolis, MN 55416
 (612) 920-7393
 Large selection of hard and soft mold making materials and plastics. IASCO also sells vacu-form machines.

Knickerbocker Plaster Co.

588 Myrtle Avenue
 Brooklyn, NY 11205
 (718) 638-7355
 Sells Hydrocal and Ultracal.

The Makeup Place

(see under Makeup Supplies)
 Sells McLaughlin foam rubber.

R & D Latex Corp

5901 Telegraph Road
 Los Angeles, CA 90002
 (213) 724-6161
 Sells a popular brand of moderately priced foam latex kit, and liquid latex.

Smooth-on, Inc.

1000 Valley Road
 Gillette, NJ
 (201) 647-5800
 Sells the widely used PMC-724 (still used for bladder effects) polyurethane mold-making material and many other mold-making materials.

Westwood Ceramic Supply Co.

1440 East Lomitas Avenue
 City of Industry, CA 91744
 (213) 330-0631
 Liquid latex and casting plasters.

PRODUCTION EQUIPMENT

Super-8 Sound

95 Harvey Street
Cambridge, MA 02140
(617) 876-5876

A complete Super-8 production supply house; cameras, projectors, editing benches, etc. For complete details on all Super-8 equipment and supplies send \$3 for the Super-8 Sound "Info Pack." Staff is extremely knowledgeable and very helpful.

Chambliss Cine Equipment

2488 Jewel Street
Atlanta, GA 30344
(404) 767-5210

Specializes in new and used 16mm equipment, cameras and accessories, production and post-production supplies; write or call for complete listing.

Steel Valley Film Service

1125 Gill Hall Road
Clairton, PA 15025
(412) 653-6224 eves./weekends

Supplies for widescreen filmmakers: anamorphic lenses, CinemaScope 8mm films, screens, etc.

Rosco

36 Bush Avenue
Port Chester, NY 10573
(800) 431-2338

The Rosco catalog contains many useful and interesting items for the fantasy filmmaker: fog machines, breakaway bottles, colored gels, diffusion materials and stage blood.

RADIO CONTROL MATERIALS

America's Hobby Center, Inc.

146 West 22nd Street
New York, NY 10011-2466
(212) 675-8922

Retail store that sells Futaba attack radio control units from around \$80.00.

Body Parts

(see under "Cable Control")
Distributes Futaba radio control units.

Futaba Co.

555 West Victoria Street
Compton, CA 90220
Sells the commonly used Futaba radio control units.

Radio Control Modeler

144 West Sierra Madre Blvd.
Sierra Madre, CA 91024
(818) 355-1476

Monthly magazine full of useful info and ads of possible interest to effects artists.

RELEASE AGENTS

Note: Almost every company in the preceeding listing sells release agents for their products; so do Sculpture House (see under Art supply) and Alcone (see under makeup). Here are two suppliers that make releases and nothing else (both tend to be *very* free with samples):

Frekote, Inc.

170 Spanish River Blvd, West
Boca Raton, FL 33431
(800) 327-0174 Telex 51-8918

They seem to have a release for every purpose, all available in aerosol cans.

Price-Driscoll Corp

75 Milbar Blvd.
Farmingdale, NY 11735
(516) 249-4200

STOP-MOTION AND ANIMATION SUPPLIES

Body Parts

(see under "Cable Control")
Distributes Rosco rear projection materials.

Fax Company

1430 Cahuenga Blvd.
Hollywood, CA 90078
(213) 466-3561

Complete animation supply house; peg bars, pegs, bond paper, tracing vellum, cels, exposure sheets, bar sheets, field guides, peg hole strips, inking gloves, cel and paper punch, paint, technical books; write for price list.

Illusion Engineering

P.O. Box 526
Marshall, MI 49068

High quality armatures and armature parts supplied as kits or assembled. Send \$3 (refundable with your first order) for a complete catalog.

The Joint Works

P.O. Box 9280
Marina Del Ray, CA 90295
Bill Hedge's Company makes joints for stop-motion armatures. Prices very reasonable. Catalog available.

Rosco

36 Bush Avenue
Portchester, NY 10573
(800) 431-2338
Rear projection materials.

Specialty Ball Co. Hartford-Universal Co.

Rocky Hill, CT 06067
(203) 563-1417
Ball bearings.

Stevens

402 Kings Road
Newport Beach, CA 92663
(714) 650-7299
Write for Bolex accessory catalog; has animation motor which fits all H-16 models.

Small Parts

(see under "Construction materials")
Ball bearings, metal stock, and small hardware.

3-M Co.

(212) 285-9600
Front projection material.

Walkerworks

80 East Oakdene Ave.
Palisades Park, NJ 07650
(201) 944-6784
Ken Walker's company makes quality stop-motion armatures for around \$500.00 and up.

SCULPTURE AND ART SUPPLY

Art Supply Warehouse

360 Main Avenue (Rt. 7)
Norwalk, CT 06851
(800) 243-5038

Note: It can be vastly cheaper to order acrylic paint from a place like Art Supply Warehouse than to buy it at your local art supply store.

The Friendly Plastic Co., Ltd.

2888 Bluff Street #233
Boulder, CO 80301
(303) 530-5115

Sells Friendly Plastic granules; they soften in warm water and remain workable like clay for about 1 minute. Now available in colors.

Polyfoam Products

9420 Byron Street
Schiller Park, IL 60176
(312) 678-4836

Sculpey and Super Sculpey (works like clay, gets hard when baked).

Sculpture House/Standard Clay Mines

National Art Building
38 East 30th Street
New York, NY 10016
(212) 679-7474

Good quality Roma Plastilina clay is widely used in the industry. Also, large selection of sculpture tools. Prices generally very high. Service is good.

CineMagic

MARKETPLACE

For as little as \$15.00 you can reach all our special effects fans.

DEADLINE: CINEMAGIC #36 in our office by April 15th.
CINEMAGIC #37 in our office by July 10th.

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HEADLINE: First line only—Word(s) of your choice

CATEGORY:

(underline them) will be printed in **BOLD CAPS**.

PLEASE BE SURE TO INDICATE THE CATEGORY YOU WANT TO BE LISTED UNDER.

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Cash, check or money order must accompany ad order. (checks payable to Starlog Press, Inc.)

MAIL TO:

CINEMAGIC, c/o Starlog Press, Inc.
475 Park Avenue South
New York, NY 10016

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START YOUR OWN MASK BUSINESS!

Everything you need to know; diagrams, formulas, suppliers, sculpture tips, distributors' addresses, etc. Send a SASE to David Ayres Special Effects Studio, 204 N. Fraser Dr. E., Mesa, AZ 85203.

Magnetic Sound Striping. Finest magnetic striping. Weberling lamination. Super-8/8 mm 61¢ per ft, 8¢ per ft. with balance stripe. Rush Service. MAGNESTRIP 333 Aycrigg Ave., Passaic, NJ 07055. (201) 773-4633.

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FOAM LATEX AND PROSTHETIC SUPPLIES. Now available Tom McLaughlin foam latex system. We also sell a wide variety of professional makeup supplies. Send \$1.00 for our current catalog. The Makeup Place, 1147 E. Broadway, Box 155, Glendale, CA 91205.

MERCHANDISE

SPFX STUDIO presents... Limited edition masks; (All hand made, painted and signed by the FX artist) Also done are displays for haunted houses, foam-latex weapons, story boards, and designs for any needed effects. Send \$1 for catalog to **SPFX STUDIO, 3224 Water Street, Whitehall, PA 18052.**

Fuji ZM800 Lip-Sync SOUND CAMERA. Many Fuji Accessories, like new condition \$240. Dennis Sherwood, 40622 N. Kenosha Rd., Zion, IL 60099 (312)-872-1759.

CABLE HOUSING, w/&w/o teflon liner. Info and sample on request. Write or call 818-367-1879. **SCHWINN SYLMAR** 13211 Galdstone Ave., Sylmar, CA 91342. Domestic and Export.

SCIENCE FICTION SOUND EFFECTS. Vol. 1 & 2—\$10.98 each. LPs or cassettes. JPM Studies-dept. CM-1. 14618 Tyler Foote Rd., Nevada City, CA 95959.

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At the end of the Course, each student will receive a personal critique of his work and counseling. Enrollment is limited for that reason.

A "CERTIFICATE OF SPECIAL MAKE-UP ARTISTRY" will be given to those who qualify

For two years after the Course, students will receive UPDATE bulletins on new materials and techniques (at no charge)

The Course is open all year. If you wish to apply, send 3 to 5 photos of your work with your inquiry to: Dick Smith, P.O. Box 511, Larchmont, NY 10538. Enclose a S.A.S.E. for further information and return of photos

Basic Set Construction

By RALPH LANGER



Dan Ketterer, boom; Johnna Wano, actress; Jim Polito, actor.

"EMIT"—Living Room

A window and doorway from the Drama Department were put in between the paneling. Paintings, curtains, a couch, a chair, a coffee table, and a television set completed the set. Two types of lighting were needed. Night lighting included a light with a blue gel behind the window and a light with red and blue gels in front of the TV set. These gels were flickered in front of the light to create the illusion of a television set illuminating a room. Morning lighting consisted of a light with a yellow gel behind the window with no gels in the room set.



Keith Oesterle, gaffer; Dan Ketterer, boom; Johnna Wano, actress; Jim Polito, actor; Dale Varga, director.

Johnna Wano, actress; Jim Polito, actor.



When the students at North Hills High School in Pittsburgh, PA, make their films and videos, they sometimes find circumstances where it is inconvenient to film at actual locations. When this happens, they have two choices.

First, the students can convert school locations to look like sets. For example, we have made films where the teachers' room was dressed or converted to look like a living room. The Health Suite was dressed to look like both a doctor's office and a hospital room. The Home Economics room was made to look like a kitchen, etc. The problem with using these locations is that they are not always available to students during the school day because of schedule conflicts. It is difficult to film at a location if a class is being taught there at the same time.

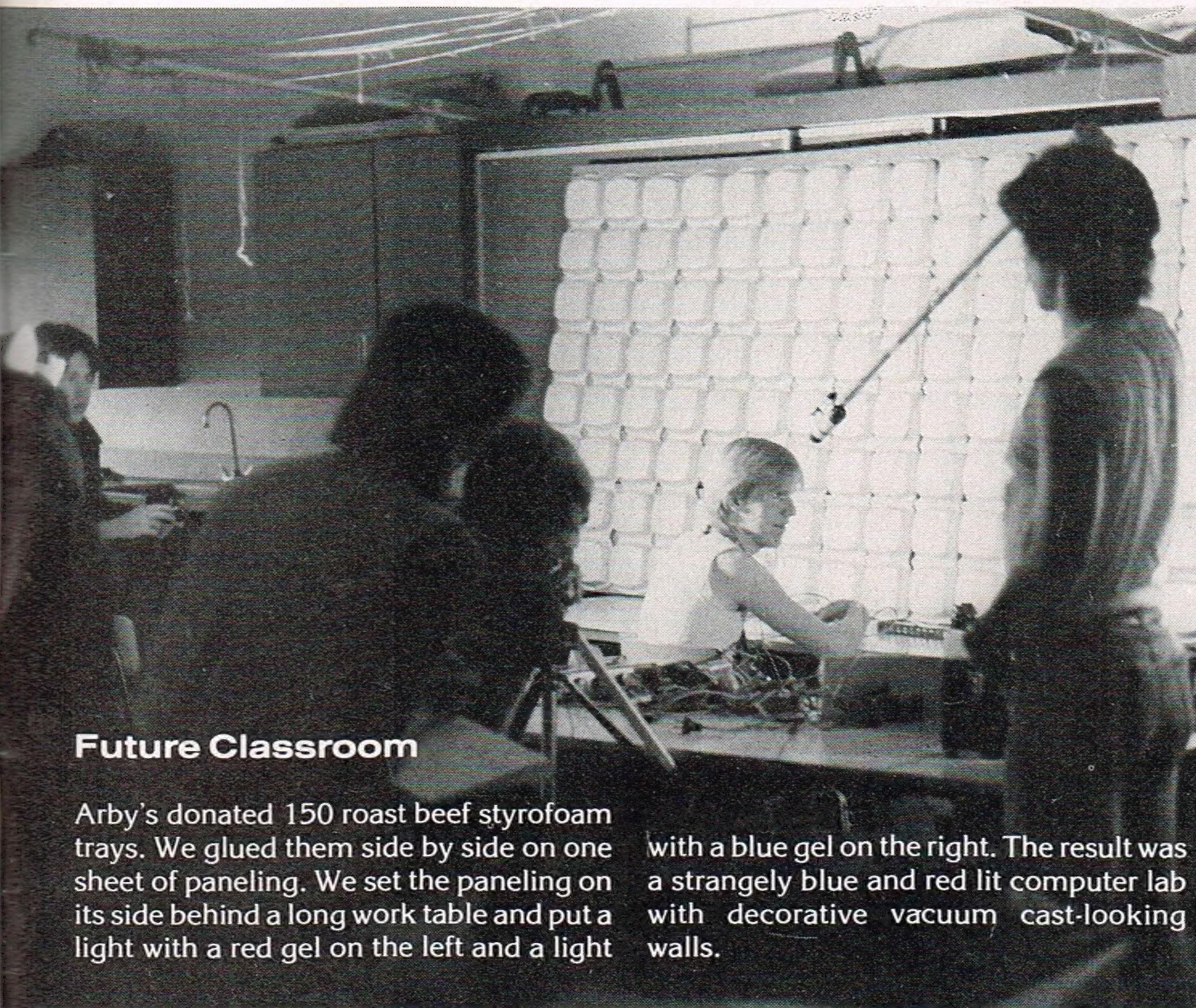
The second alternative is set construction. Five or six sheets of paneling from a local lumber company can be put together and dressed to look like any room. The North Hills High School Drama Department lends us lightweight doorways and window sections to use with the paneling when they are not being used for scenery in school plays. This adds heightened realism to the finished set.

Our film students got paneling free of charge when the Drama Department told them they were throwing it out. The paneling was already reinforced on the back by nailed wood stripping.

To build a basic room shape, nail the paneling together edge to edge in the shape of an "L." Wood braces can be used to prop the paneling up from behind. Rope can be used to secure the paneling to permanent cupboards or window frames in the room to keep the flimsy paneling secure. Double check the walls to make sure the construction is solid. People could get injured if the walls cave in on them. If windows or doorways from the Drama Department are to be added between the paneling, do it now.

Once the basic room is constructed, the set should be dressed. This means wallpaper, posters, furniture, rugs, and miscellaneous items should be added to make the room look real and lived in. Props can be obtained from the Drama Department, by raiding teacher's rooms and other classrooms, and some props will have to be brought from home. The more realistic the set decoration, the more the audience will think the film or video was done on location.

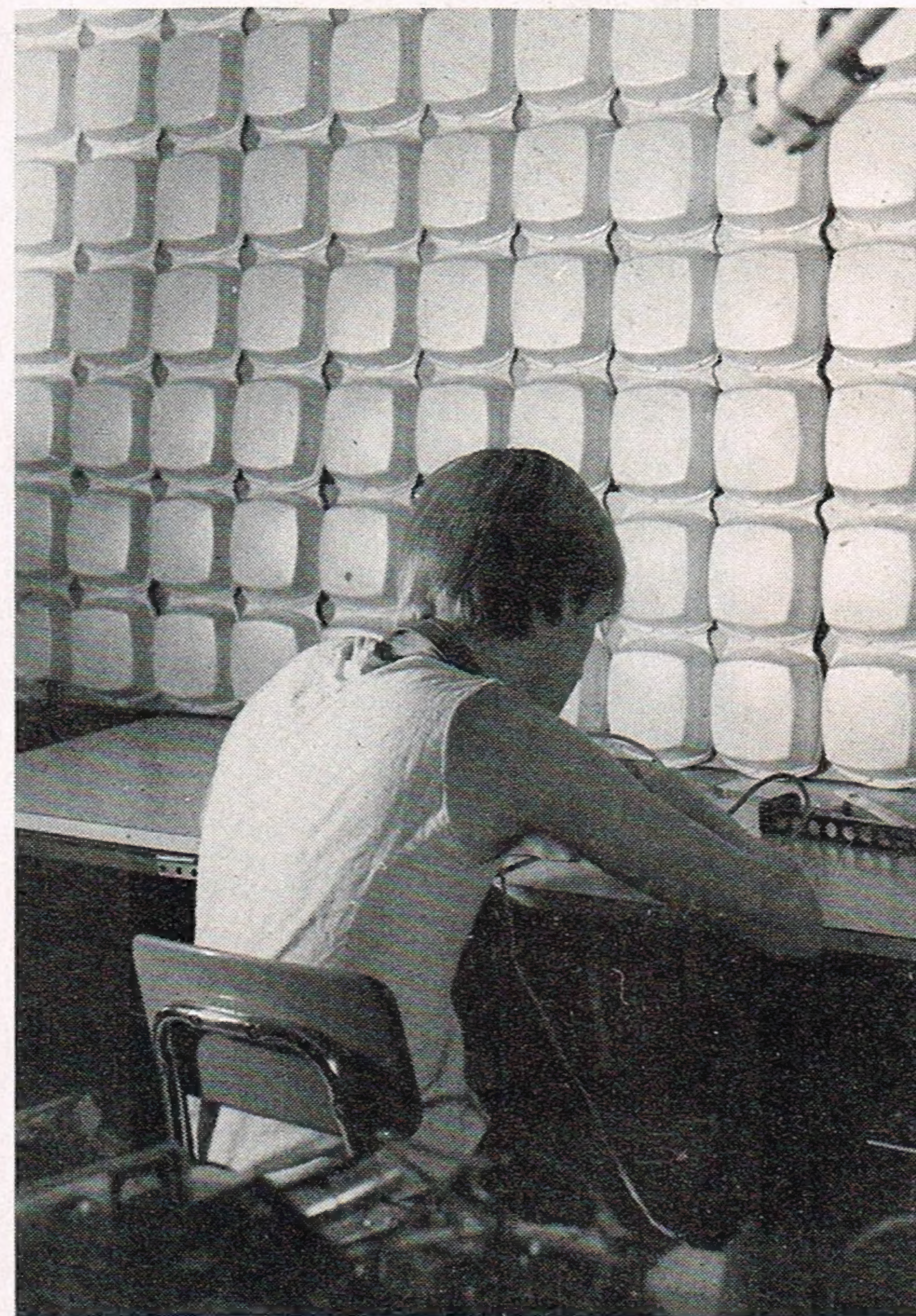
The film students at North Hills High School have used the same paneling for the following rooms in their films:



Future Classroom

Arby's donated 150 roast beef styrofoam trays. We glued them side by side on one sheet of paneling. We set the paneling on its side behind a long work table and put a light with a red gel on the left and a light

with a blue gel on the right. The result was a strangely blue and red lit computer lab with decorative vacuum cast-looking walls.



Paul Heter, actor.

"Experiment"—Living Room

Two pieces of paneling with a window between was set up. Curtains, a couch, and a table with a lamp was placed in front of this wild wall. Two students were established sitting on the couch.

Next, the entire wall, including the window and curtains, was layed flat on the ground. The couch, table, and lamp were also placed in the same position on top of the wall. When the camera and cameraman filmed while perched on a platform up at the ceiling, the view through the camera looked as though the actors were sitting on the couch. In reality, they were lying on the couch. One actor did a back flip up the wall. From the camera's point of view, he was sitting on the wall.

With the proper set dressing, five or six pieces of paneling can be made to look like any type of room for film or video. The effect will depend upon how much work and effort the crew is willing to put into scavenging for props and set decorations.

Dale Varga, actor; Eric Kist, actor.



Dale Varga, camera; Eric Kist, actor.

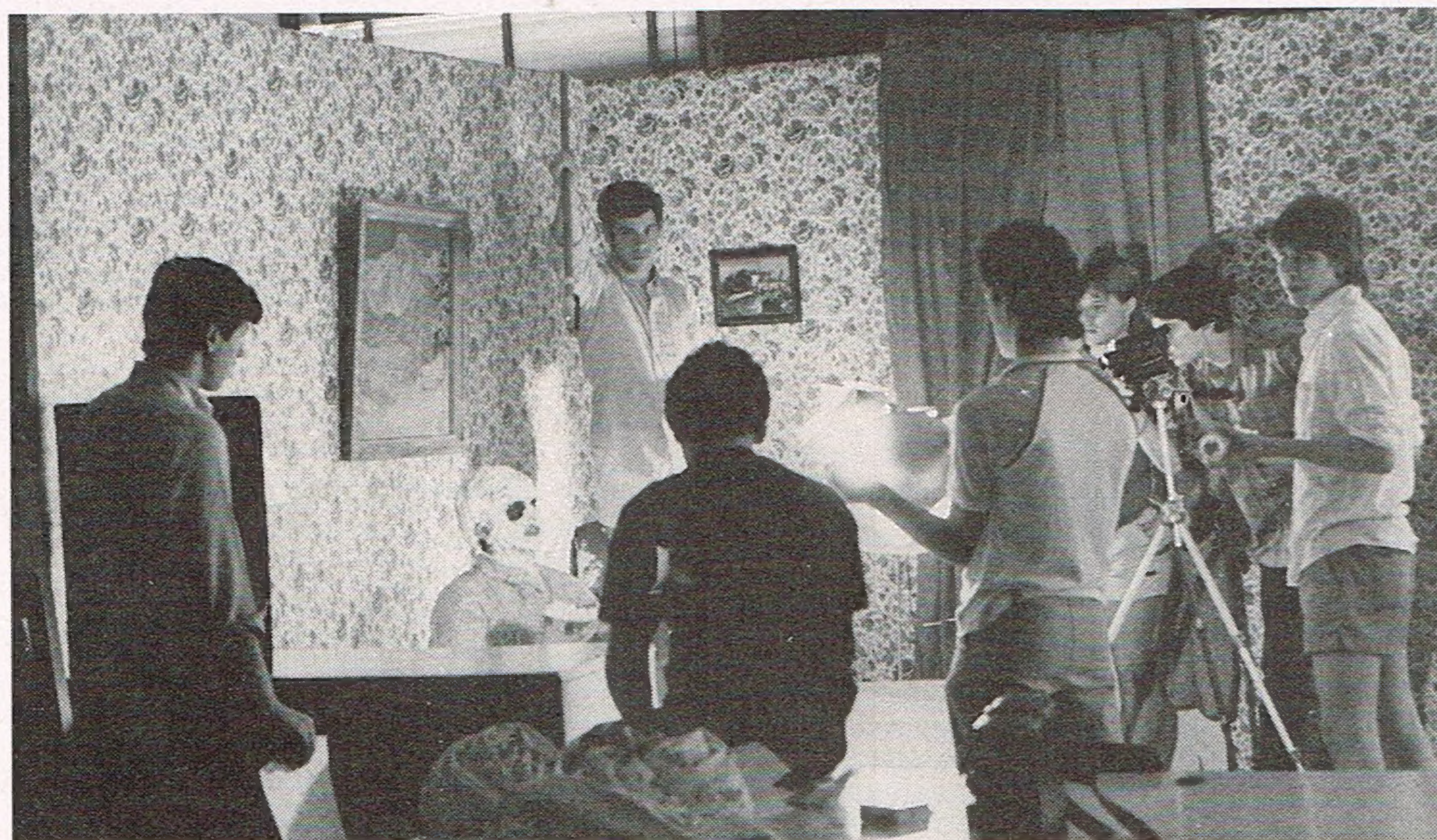


Jeff Cooper, Dan Bingham, crew; Rick Schubert, actor; Chip O'Hara, boom; Ted Cinker, camera; Jeff Cooper, director.



"The Exerciser"—Bedroom

A window was used and the whole set was wallpapered. The Drama Department lent us a bed, paintings for the walls, and a dresser with a mirror on it. The actor was to disintegrate while lying on the bed. To do this, we put a bald cap on the actor that was made by painting four thin coats of latex rubber over a styrofoam wig stand. The actor's eyes were blackened by using Halloween makeup. Shaving creme was put all over the actor's head for a quick but effective makeup job. The actor was filmed under the covers from the knees to the head. A fogger machine, owned by one of the students, was put under the covers at the foot of the bed. The result was fog smoke creeping through the fabric of the bedspread as well as the side of the bedspread, giving the illusion that that actor was disintegrating.



Awards Won by North Hills Films

E.M.I.T. (1984)—Dale Varga, Jim McCarthy, Johnna Wano, Jim Polito, Keith Desterle, Sue Nobel, Paul Heter, Scott Deems, Harry Kruse, Dan Ketterer.

1984—Five Best Award, Photographic Society of America Teenage Film Festival, Chicago.

1984—First Place, Experimental Film, Los Angeles Film Teacher's Teen Film Expo.

1985—Honorable Mention, Edinboro University's 5th Annual High School Art Competition.

School Daze (1984)—Chris Martin, Rich Pintado, Mike Galvin, Dan Jackson, Darren Stengelm, Darryl Sammartino, Margie Limberty, Bob Woistman.

1984—Second Prize Silver Medal, Hollywood Teenage Film Society Film Festival, Los Angeles.

1984—Five Best Award, Photographic Society of America Teenage Film Festival, Chicago.

1984—Screened at Pittsburg Filmmakers, Oakland.

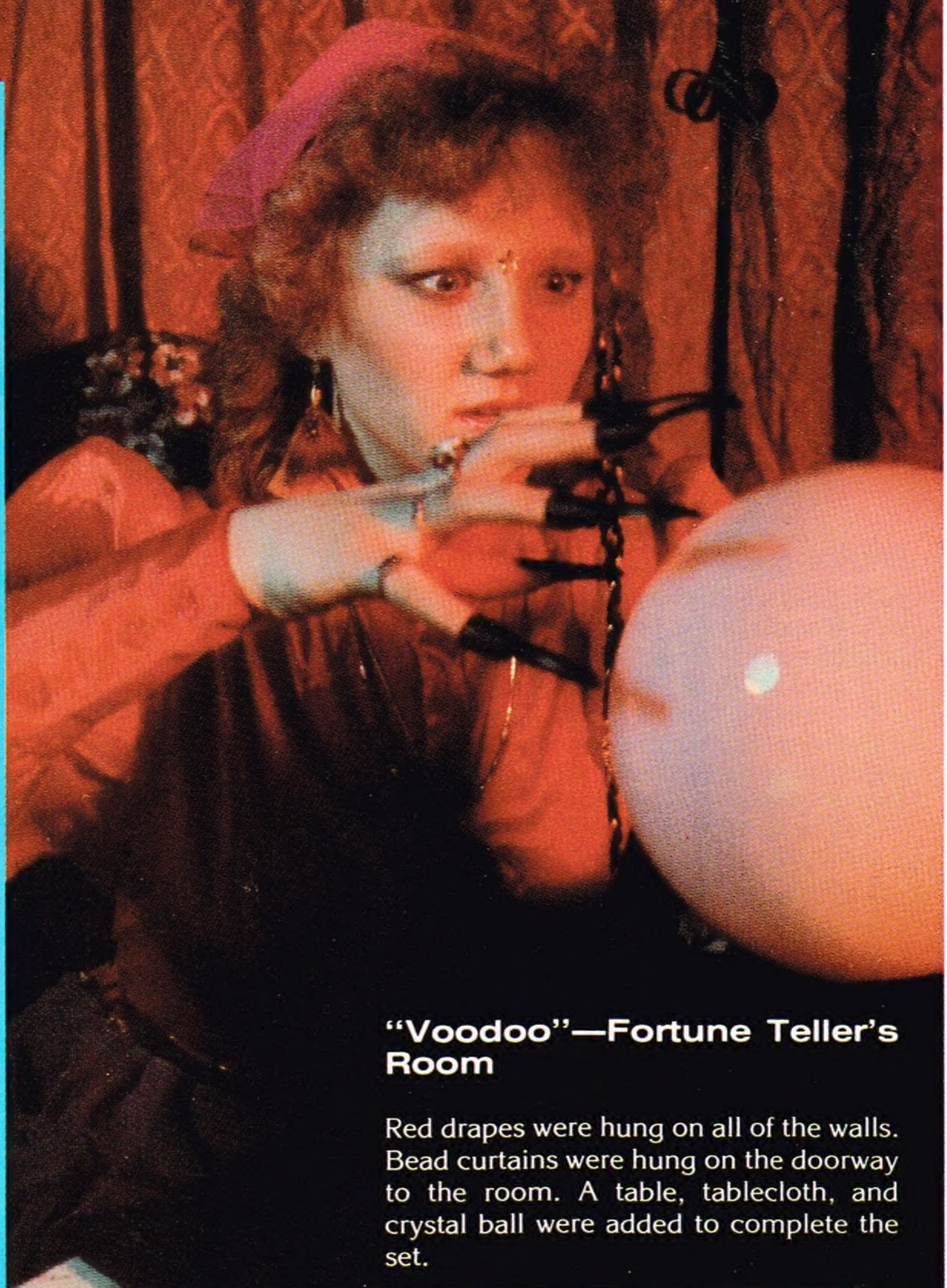
1985—First Prize, Edinboro University's Fifth Annual High School Art Competition.

1985—Second Prize, Cork Ireland Jr. International Student Film Festival, Cork, Ireland.

1985—Third Prize, National Student Media Festival, Las Vegas.

Voodoo (1983)—Joe Deffner, Scott Drop, Brian Bedel, Greg Premore, Tom Hall, Beth Ann Brady.

1984—Honorable Mention, Photographic Society of America Teenage Film Festival, Chicago.



"Voodoo"—Fortune Teller's Room

Red drapes were hung on all of the walls. Bead curtains were hung on the doorway to the room. A table, tablecloth, and crystal ball were added to complete the set.



"School Daze"—Kitchen

This film was made after EMIT so the same room structure was kept including the same window and doorway. The dressing made this look like a completely different room. The paneling texture was kept on the bottom two feet of the room. The top of the walls were wallpapered with oil cloth wallpaper that was donated. Wood stripping separated the paneled bottom from the wallpapered top of the walls. The Home Economics Department lent us a broken refrigerator, a stove, a kitchen table, curtains, and kitchen utensils to dress the set. Paneling with a brick texture was put behind the stove to add to the effect.



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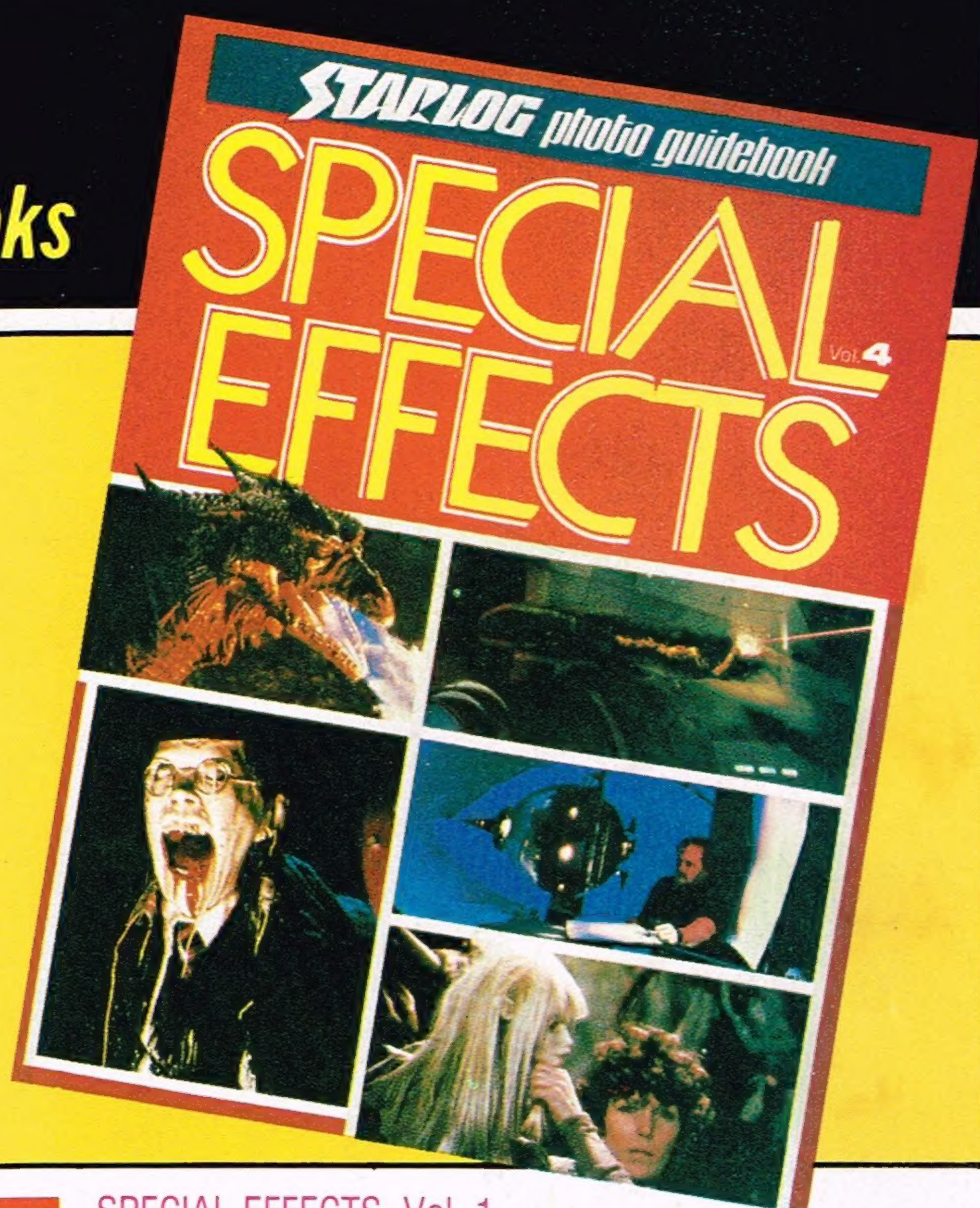
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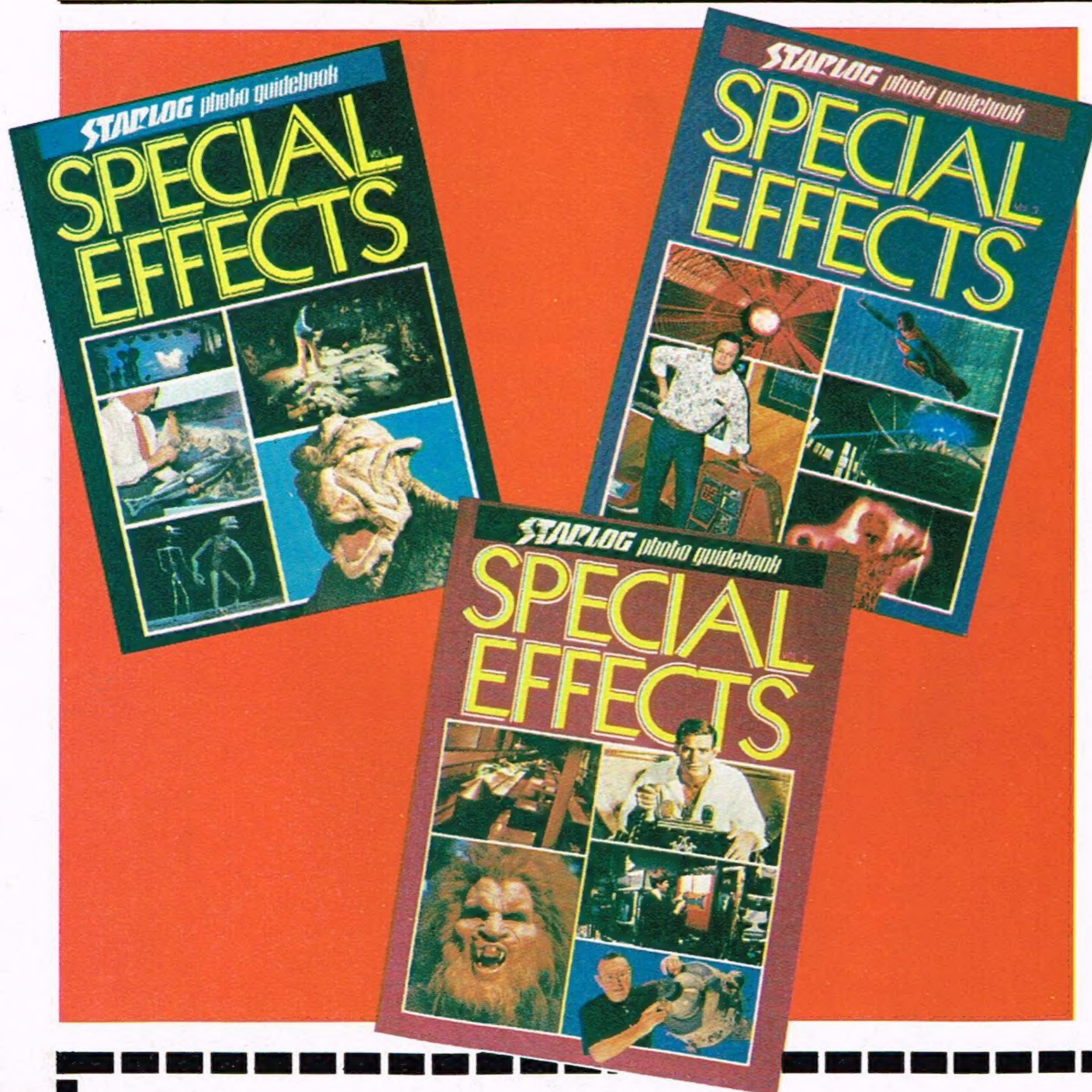
See the amazing world of miniatures and model animation—from *King Kong* to Ray Harryhausen and TV's *Land of the Lost*. Special blueprint section includes: the Nautilus from *20,000 Leagues Under the Sea*, Robby the Robot, the C-57D flying saucer from *Forbidden Planet*. Behind-the-scenes color photos from *Battlestar: Galactica*, *Space: 1999*, *The Lost Saucer* and SF classics like *Close Encounters*, *Flight To Mars*, *Thunderbirds*, *War of the Worlds*, *Star Trek*... more!

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